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NOTES ON PHALÆNIDÆ* (LEPIDOPTERA)

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The notes in this paper resulted from the identification of specimens for Mr. Graham Fairchild and for the Museum of Comparative Zoology. These specimens represented Mr. Fairchild's recent collections in Nova Scotia and part of Professor Thaxter's collections in Newfoundland in 1882.

One name has been removed from synonymy and is used for a valid species with another name transferred to it as a synonym; one name heretofore considered of specific rank has been sunk to subspecific status; two names heretofore listed as being of specific rank have been sunk as synonyms; and three new subspecies have been described.

ANOMOGYNA PERQUIRITATA Morr.

1874, Morrison, Proc. Bost. Soc. Nat. Hist., XVII, 136, *Polia.*
1880, Grote, Bull, Brklyn. Ent. Soc., III, 37, *Agrotis. baileyana* Grt.
1879, Grote, No. Amer. Entom., I, 92, *Agrotis.*
1880, Grote, Bull. Brklyn. Ent. Soc., III, 37, *perquiritata, Agrotis.* ‡*speciosa* Auct. (nec Hbn.)
1890, Smith, Bull. U. S. N. M., XXXVIII, 44, (partim.), *Platagrotis.*
1893, Smith, Bull. U. S. N. M., XLIV, 58, (partim.), *Platagrotis.*
1903, Hampson, Cat. Lep. Phal. B. M., IV, 580 (partim.), *Aplectoides.*
1924, Draudt, in Seitz, Macrolepid., VI, 74 (partim.), *Aplectoides.*
1928, McDunnough, Bull. Natl. Mus., Canada, LV, 77 (partim.), *Anomogyna.*
‡*perquirita* Auct. (lapsus calami).
1890, Smith, Bull. U. S. N. M., XXXVIII, 44, *speciosa, Platagrotis.*
1893, Smith, Bull. U. S. N. M., XLIV, 58, *speciosa, Platagrotis.* subspecies *beddeci* Hamps.
1913, Hampson, Ann. Mag. Nat. Hist., (8), XII, 589, *Aplectoides.*
1921, McDunnough, Can. Ent., LIII, 179, *Anomogyna.*

*Noctuidae of authors.

1924, Draudt, in Seitz, Macrolepid., VI, 74 (ignot.), *Aplectoides.*
1928, McDunnough, Bull. Natl. Mus. Canada, LV, 60 & 77, *Anomogyna.*
‡*livalis* Auct. (nec. Sm.)
1910, Smith, Jour. N. Y. Ent. Soc., XVIII, 86, [Hampson MS., non nom.], *Platagrotis.*
subspecies *partita* McD.
1921, McDunnough, Can. Ent., LIII, 179, f. 1 male genit., *Anomogyna.*
1928, McDunnough, Bull. Natl. Mus. Canada, LV, 60 & 77, *beddeci* race, *Anomogyna.*

The type of *perquiritata* Morrison is in the National Museum. A somewhat lengthy bibliography is cited because of the general confusion of this species with the closely related *speciosa* Hübner.

Grote (1880) contended that he recognized two species, *perquiritata* and *speciosa*, and that his name *baileyana* is a synonym of the former. In view of this direct statement, and the fact that the Grote types have probably been destroyed, there seems nothing to do but to accept the synonymy proposed by Grote. The synonymy proposed by Smith (1890 and 1893) has been accepted, to date, by all subsequent authors, but is certainly incorrect in so far as the name *perquiritata* is concerned. Obviously Smith did not recognize the existence of two closely related species until about 1910, when he described the form of *speciosa*, which is pale with prominent markings[1], as a separate species under the name of *livalis*[2].

The author has seen some eighteen examples of *perquiritata* inclusive of specimens representing all described subspecies. These possess a more constricted and more irregular reniform than that of examples of *speciosa* from Europe, Labrador, and New Hampshire (in the National Museum). The orbicular tends to be smaller. Smith pointed out these characters (1910). The male genitalia have been discussed by McDunnough (1921 and 1928), and males of the two species may easily be sorted by denuding the tips of the harpes. The tip of the harpe of speci-

[1]Variety *mixta* Walker according to Hampson.

[2]Thanks are due to Miss Augusta Meske and other members of the Entomological staff at Rutgers College for a sketch of the harpe of the type of *livalis*, and structural comparison with this type of specimens of *perquiritata* and *speciosa*.

mens of *speciosa* is lobate, while the similar part of specimens of *perquiritata* is bifurcate. Also specimens of *speciosa* usually possess an oblique shade from the costa, passing through and darkening the reniform; whereas this shade in *perquiritata* is usually obsolescent.

The type of *perquiritata* is the only example seen by the author. It possesses some dark rufous tinting on the median area of the fore wing and seems intermediate between subspecies *beddeci* Hampson, a name applicable to specimens with contrasting maculation and pale ground similar to variety *mixta* Walker of *speciosa* Hübner, and subspecies *partita* McDunnough, from the mountains of Alberta and British Columbia. The latter has the fore wing heavily and evenly powdered with fuscous, appearing quite dark, the basal dash and claviform more or less obsolescent. More specimens from the mountains of New England will be necessary to ascertain if either *beddeci* or *partita* are the same as *perquiritata*.

Some years ago a specimen from Mt. Rainier was given the author by Mr. George P. Engelhardt for the Barnes Collection. This has been held awaiting receipt of more material. Recently a second specimen was submitted by Mr. J. F. Gates Clarke. These seem to represent a separate northwestern race, described as follows:

Anomogyna perquiritata clarkei Benjamin, new subspecies

‡*arctica* Auct. (nec Zett.).

1905, Smith, Jour. N. Y. Ent. Soc., XIII, 191, *speciosa* var., *Aplectoides*.

Size and general habitus of *partita*, with the same blackish powdery appearance, but differing by the fore wing possessing paler basal, terminal, and subterminal areas, causing the median portion to appear disconcolorously blackish; in addition the subterminal sagittate black dashes are larger and more contrasting; the basal black dash is defined; and a strongly marked claviform is present.

Holotype male, Shuksan, Wash., VII-29-27 (Miesan Clarke); 1 male paratype, Mt. Rainier, Wash., 6,000 feet, VII-25-1923 (George P. Engelhardt). Cat. No. 44358, U. S. N. M.

Anomogyna imperita Hübner

1823? Hübner, Zutr. exot. Schmett. (3), p. 16, (224), ff. 447-448, *Graphiphora* (*Ogygia*).

1915, Dod, Can. Ent., XLVII, 7, *Platagrotis.*

1921, McDunnough, Can. Ent., LIII, 176, *Anomogyna. discitincta* Walker.

1856, Walker, Cat. Lep. Het. Br. Mus., IX, 27, *Bryophila. comparata* Moeschler

1862, Moeschler, Wien, ent. Mon., VI, 131, pl. V, f. 5, *Agrotis. saxigena* Morrison

1874, Morrison, Proc. Bost. Soc. Nat. Hist., XVII, 162, *Agrotis. arufa* Smith

1905, Smith, Jour. N. Y. Ent. Soc., XIII, 192, *Platagrotis.*

The Hübner and Moeschler types came from Labrador; the type of *saxigena* from Mt. Washington, N. Hamp.; the Walker type from St. Martin's Falls, Hudson Bay; and the Smith type from Yellowstone Park, Wyo.

Labrador specimens are variable both in size and coloration, some being extremely runty while others are as large as the largest that are in the collection from Mt. Washington and Ontario. The color difference between *imperita* and *arufa* mentioned by Smith, and accepted by all subsequent authors as a specific character, does not hold. The Smith type is somewhat rubbed, but reddish scales are evident. Another male from Yellowstone Park, bearing the same kind of labels as the type, shows practically the same coloration as some specimens from Labrador. The only distinction which is observed between the Yellowstone Park specimens and typical *imperita* seems to be in size, the former being slightly larger than any in the long series from Labrador. Alberta and Colorado specimens practically agree with Yellowstone Park material. In this regard, Dod (1915) states that the Walker type of *discitincta* is larger than Labrador specimens in the British Museum. The genitalia of *imperita* and *arufa* show no differences, and the latter name seems unworthy of retention. Both Dod and McDunnough have considered Alberta material as typical *imperita.* Should subsequent authors desire a separate name for the slightly larger specimens, *discitincta* Walker would appear to be available and with priority over *arufa* Smith.

Anomogyna homogena McDunnough

1921, McDunnough, Can. Ent., LIII, 178, f. 3 male genit., *Anomogyna.*

1924, Draudt, in Seitz, Macrolepid. World, VI, 74 (ignot.), *Aplectoides.*

1928, McDunnough, Bull. Natl. Mus. Canada, LV, 60 and 77, *Anomogyna.*

‡*sincera* Auct. (nec H.-S.)

1913, Dod, 43rd Ann. Rept. Ent. Soc. Ont. (1912), 119, *Platagrotis.*

‡*mevesi* Auct. (nec Auriv.)

1915, Dod, Can. Ent., XLVII, 7, *Platagrotis.*

Typically a dull powdery gray species somewhat resembling *A. perquiritata partita* in the ground color of the fore wings, and with smoky hind wings. The species was described from a male holotype from Banff, Alberta, (Canadian National Collection), and a pair of paratypes from Pocahontas, Alberta (Barnes Collection).

Anomogyna homogena conditoides Benjamin, new subsp.

Size and course of the markings as in the typical subspecies, but with the ground color of the fore wings always possessing a rufous tint, and variable as in *pressus* and *condita*, with which the present variety agrees in general habitus and in the brightness of the markings.

The male genitalia present no specific differences from those of typical *homogena.*

Holotype male, allotype female, 3 male and 35 female paratypes, Salmonier, Newfoundland, Aug. 5-15, 1885 (R. Thaxter).

Notes: Received for identification from the Museum of Comparative Zoology: Holotype, allotype, 2 male 10 female paratypes in U. S. N. M.; 1 male and 25 female paratypes in Museum of Comparative Zoology, Cat. No. 44359, U. S. N. M.

Oligia minuscula Morrison

A specimen of this rare species, compared with the type, together with two pairs collected at Lakehurst, N. J., by Mr. Frederick Lemmer, were received with the Barnes Collection.

A single spine is occasional upon the mid tibia and/or upon the hind tibia. Specimens lacking the spines showed no traces of spine sockets where the scaling was removed.

The following subspecies was noted to possess similar tibial spines on the male, but not on the female.

Oligia minuscula grahami Benjamin, new subsp.

Similar to typical *minuscula*, but with a darker ground color; the well defined markings of the typical subspecies are obsolescent; the black filling is lacking in the cell; as is also the submedian dash.

The present subspecies also differs from typical *minuscula* by the clasper being more serrate, but the difference is probably not enough to be specific.

Holotype male, allotype female: both from Cap Rouge, Cape Breton Island, Nova Scotia, IX-2-28 (Graham Fairchild).

Notes: Holotype male in the U. S. N. M.; allotype female in Museum of Comparative Zoology. Cat. No. 44360, U. S. N. M.

ANTHOCHARIS SARA BDV., RACE STELLA EDW.

(Lepidoptera, Rhopalocera, Asciidæ)

BY J. D. GUNDER

Pasadena, California

Mr. J. W. Tilden of Santa Cruz spent the fore part of July, 1933, in the vicinity of Echo Lake in El Dorado County, California, and to him goes the credit for re-finding the Orange-tip butterfly, *Anth. sara stella* Edw. unreported in the last twenty years. He took quite a long series in both sexes in this locality. Echo Lake is in the eastern and highest part of El Dorado County, south of Glenn Alpine Springs (Fallen Leaf Lake) which adjoins Lake Tahoe, and is just off the main highway near the village of Vade. All this region is immediately south of Lake Tahoe.

Stella was adequately and accurately described by W. H. Edwards in the *Canadian Entomologist* (11:87, 1879), from a series of specimens taken at "Yo Semite" and near Lake Tahoe. Mr. Edwards knew it to be a high Sierra species and not in any sense a "variety" or what we might more modernly call a form. In the original description special mention is made of the lemon-yellow ground color in *both* sexes and in all specimens, and this difference is carefully noted in comparison to *reakirtii* Edw. and *julia* Edw.

In a list of the "Butterflies of the Lake Tahoe Region" published in the June, 1910, Entomological News, Mr. R. J. Newcomer reports *stella* a rather common diurnal near Glenn Alpine

Springs below 8500 feet from the middle of May to the last of July. He mentions that the males have a yellow tinge. Mr. F. Grinnell and Mr. F. X. Williams also collected in this area, but neither of these gentlemen go into the matter of specific relationship. The late Dr. Wm. Barnes of Decatur, Ill., did not have enough *stella* in his series to see its proper status, nevertheless he accords it a racial position in his B. & McD. Check List of 1917, following Edwards own lead, and the B. & Benj. List of 1926 did not alter this rotation. Mr. W. G. Wright in his "Butterflies of the West Coast" failed to place *stella* correctly, showing white males, etc., together with other specimens which are not what the name represents. Lack of material also prevented Dr. J. A. Comstock in his "Butterflies of California" from identifying *stella* and he erroneously puts it (p. 43) as a "dimorphic form of the female of *A. sara*." He further confuses its status in the same publication by the placing of the name as a race in the state list (p. 232), though this placing happens to be correct. His figs. 13 and 15 (marked *stella*) on Pl. 2 probably represent the females of race *flora* Wright which is correctly listed as a race of *sara* Bdv. in the two Barnes lists. *Flora* Wright occurs in Oregon and Washington and is a larger and brighter marked butterfly than *reakirtii* Edw. Holland in his new edition of the *Butterfly Book* balls-up the identification of *stella* by showing a white male. The usual word "types" is inserted, regardless of original description data, if it had only been read.

From the above it can be seen that the group of butterflies known to Edwards as *stella* has been quite an enigma, however there is no question but that it is a yellowish mountain race and should be held as such. A new form name is needed for the yellow examples of race *reakirtii* Edw., so a comparative description follows:

ANTHOCHARIS SARA REAKIRTII Edw., form **flavicoloris** Gunder, new

These are race *reakirtii* Edw. which have the yellow ground color in both sexes, instead of the usual white background. Its males are found *very* rarely (otherwise it would be a sexual form), while the females are comparatively common. The amount or spread of the yellow flushing varies in individuals, the types listed below having complete yellow color. Some-

times the females show a greenish cast, but this is not uncommon in typical white *reakirtii*. The red apical patch on the fore wings, the general black maculation and the dense under side green design remain the same in *flavicoloris* as in *reakirtii*. It is possible that more yellow forms are found in northern California around the Bay district, than in southern California. Race *stella* Edw. has a distinct California mountain habitat in the central Sierras, while race *reakirtii* Edw. occurs in the hill districts and costal areas. The yellow of *stella* is a delicate lemon-yellow shade, while the color of *flavicoloris* is of a deeper tone, yet not as vivid as that of *pima* Edw. which is an Arizona insect without geographical connection. The lemon-yellow of *stella* is constant, being of the same shade on both upper and under surfaces and over the entire ground expanse, while in *flavicoloris* the expanse of this yellow shading may not occupy extreme areas. Yellow examples of species *sara* are more common than those of race *reakirtii*. Also yellow males of *sara* are not unknown. *Sara* was described as dimorphically colored in the female. I might add that the black maculation in general of *stella* is more delicate than in either *sara* or *reakirtii* and in this respect it approaches *julia* Edw.

Holotype male, expanse 37 mm., Mar. 12, 1926, Tocaloma, Marin County, California (Sternitzky). Two male paratypes, quite similar, from this general San Francisco Bay region. Allotype female, expanse 36 mm. Mar. 22, 1930, Berkeley, California. Two female paratypes with March dates from Los Angeles area. Types in author's collection.

Note Regarding Euschides cressoni Blais.

Immediately after the publication of the description of *Euschides cressoni* Blaisd. (Trans. Amer. Ent. Soc., LIX, Sept. 21, 1933, p. 191.), I received word from Prof. H. C. Fall that he possessed a specimen. A week or so later I received another specimen collected at La Puerta, California, Oct. 1925, from Mr. Geo. Field of San Diego, California. *Cressoni* was described from a unique. Three specimens are now known, without further data regarding habitat. It is hoped that other specimens will be secured.—Frank E. Blaisdell, Sr.

NEW OR LITTLE-KNOWN WESTERN BEES

BY T. D. A. COCKERELL

Andrena campbelli Cockerell, sp. n.

Male. Length about or nearly 9 mm., anterior wing 7 mm.; a species closely allied to *berkeleyi* V. and C., the males with short thick flagellum, red beneath except at base, the basal nervure going conspicuously basad of nervulus, the apical plate of abdomen broad and hatchet-like, and the sides of sixth sternite strongly dentiform. It differs from the description of *berkeleyi* thus: clypeus light lemon-yellow except the spots and apical margin; very small elongate lateral marks next to clypeus on each side; tergites 2 to 4 with very distinct white hair-bands, that on the second narrowest; scutellum closely punctured, not strongly shining; tegulæ practically black in front, posteriorly red; stigma narrow, pale greyish, somewhat reddish, with heavy dark margin; second cubital cell receiving first recurrent nervure distinctly beyond middle; second tergite in middle depressed considerably less than half, but much more than a third. It is also very near to *A. lamellicauda* Ckll., but smaller, with clear white bands on abdomen and basal nervure going well basad of nervulus. Also the stigma is quite differently colored. The abdominal structure is rather suggestive of *A. robertsonii* D.T., which is however a very different insect.

Colorado; Boulder, May 21, 1933 (H. W. Campbell). There is perhaps some affinity with *A. asiatica* Friese (Amanusgab, Jariboschi), the male of which is large; face marks very pale yellow, lateral marks very small; wings dark reddish brown; basal nervure going far basad of nervulus; second cubital cell higher than long, receiving recurrent nervure a little below middle; third cubital cell long; abdomen with white hair-bands (interrupted on tergites 2 and 3), and red hair at apex. This account is based on a specimen in the American Museum of Natural History. Two other species with small lateral face-marks placed obliquely next to clypeus, are *A. erythrocnemis* Morawitz and *A. pallitarsis* Pérez, but these are small species, the anterior wing is less than 7 mm. and the basal nervure meets nervulus in *erythrocnemis* and falls short of it in *pallitarsis*. Compared with *A. bridwelli* Ckll., *A. campbelli* is easily known by the face being not so broad and the clypeus high, quite a different shape.

Andrena physariæ Cockerell, sp. n.

Female. Length about 10 mm., anterior wing 7.7 mm.; black, including mandibles antennæ and legs, the tarsi rufescent at apex; third antennal joint somewhat longer than next two combined, its length about 430 microns; front vertically striate; facial fovæ narrow, pale reddish, separated from orbit only by a shining line; clypeus dull and granular at sides, but the broad disc flattened, almost concave, polished, with strong scattered punctures; process of labrum truncate, with dorsal pit; mesothorax dull in front but broadly shining on disc, with distinct, not very dense, punctures; scutellum shining, finely punctured; area of metathorax triangular, dull; hair of head and thorax red, paler on head (pale fulvescent on cheeks) but rich fox-red on thorax above, especially bright on scutellum and postscutellum, but anterior part of scutellum broadly bare; tegulæ black; wings hyaline, faintly yellowish, the broad outer margin conspicuously dusky; stigma well developed, light ferruginous, without a dark margin; nervures of basal part of wing dark, but from level of stigma on very pale reddish; basal nervure falling a little short of nervulus; second cubital cell moderately broad, narrowed above, receiving recurrent nervure distinctly before middle; legs with pale reddish hair, but greyish, not at all brilliant, on inner side of hind tarsi; middle basitarsi large and very broad, on inner side with a large oval blackish area; hind basitarsi broad; spurs light red; hind tibial scopa pale red; abdomen shining, very finely but distinctly punctured; second tergite in middle depressed more than a third but less than a half; first tergite with margin all black with no red hair band; tergites 2 to 4 with rather broad very distinct pale fulvous hair-bands, interrupted in middle on second; caudal tuft clear red.

Colorado; Boulder, at flowers of *Physaria didymocarpa*, May 21, 1933 (H. W. Campbell). A distinct species separable from several similar ones as follows (females):

Middle of clypeus dull, not polished 1
Middle of clypeus conspicuously polished 2
1. Mesothorax dull . . . . . *brachycarpæ* V. and C.
Mesothorax highly polished . . . . *auricoma* Smith
2. Facial fovæ broad 3
Facial fovæ very narrow (as in *auricoma*) 4
3. Clypeus with strong punctures in middle . *coloradina* V. and C.
Clypeus impunctate in middle . . . . *pronitens* Ckll.
4. Hind tibiæ and tarsi clear red; clypeus not flattened in middle . . . . . *speculifera* Ckll.
Hind tibiæ and tarsi not red; clypeus flattened in middle . . . . . *physariæ* Ckll.

Andrena (Conandrena) angustifrons Cockerell, sp. n.

Female. Length about 10 mm., anterior wing nearly 8 mm.; black, including mandibles antennæ and legs, the tarsi obscurely rufescent apically; eyes long and narrow, black; facial quadrangle long and narrow, much longer than wide; clypeus shining and sparsely punctured, the middle somewhat flattened with no trace of a ridge; malar space very short but not linear; process of labrum very broadly truncate, subemarginate, the labrum with much red hair; second joint of maxillary palpi longest, about 270 microns, last join 175; blade of maxilla very broad; third antennal joint 335 microns long, fourth 175, fifth 190; facial fovæ narrow, creamy white, close to eye; vertex very narrow, shining on each side of ocelli; hair of head and thorax very pale dull fulvescent, more distinctly reddish on scutellum; mesothorax shining on disc, where it is very weakly and sparsely punctured; scutellum polished, the disc hardly punctured; area of metathorax entirely dull, hardly defined; tegulæ small, very dark reddish or brownish; wings hyaline, slightly yellowish, the apical region distinctly though not deeply infuscated; stigma and nervures (except the subcostal) clear bright ferruginous; stigma well developed, pointed apically; basal nervure falling a little short of nervulus; second cubital cell very narrow, receiving the recurrent nervure near its end; third cubital cell long; legs with pale reddish hair, hind knee-tuft pale fulvescent; hair on inner side of hind tarsi nearly white; the copius scopa of hind legs reddish posteriorly; abdomen dullish, very finely and distinctly punctured, the first tergite more shining; second tergite in middle depressed rather more than a third; first tergite with no hair-band but a small spot of hair on each side; tergites 2 to 4 with very broad dull white hair-bands; margin of fifth and apex with light orange-fulvous hair.

The pollen collected is yellowish white, the grains spherical, probably belonging to Campanula. Nearest to *A. cheyennorum* V. and C., from Nebraska but tarsi not ferruginous; it is perhaps no more than a local race or subspecies but the venation differs. The face is considerably narrower than in *A. bradleyi* Viereck and the foveæ are much narrower.

Idaho; Blackfoot, June 22, 1931 (Louise Ireland).

Andrena unicula Cockerell, sp. n.

Male. Length about 8.5 mm., anterior wing 7 mm.; black, with broad, slightly bluish abdomen; clypeus creamy white with two conspicuous black spots (which are considerably larger than in *A. amplificata*); antennæ black with the flagellum obscurely

brownish beneath, third joint a little longer than next two together; front finely, longitudinally striate; malar space very short; cheeks flattened, not produced or angular; mandibles ordinary; lower margin of clypeus black; process of labrum rounded; hair of head black, a little pale fulvous hair on occiput; thorax with abundant long pale brownish hair, a sort of very dilute fulvous, mesothorax dull, the posterior disc shining; scutellum shining anteriorly; area of metathorax entirely dull, poorly defined; tegulæ shining black; wings reddish hyaline; stigma rather slender, pale fulvous with a dusky margin; nervures light brown; basal nervure falling just short of nervulus; second cubital cell not very long; legs with mainly black hair; abdomen with no hair-bands (the type carries a Stylops under the fourth tergite); second tergite in the middle depressed less than a third; middle of second tergite dullish with a very fine sculpture of transverse lines.

Colorado; Boulder, May 21, 1933 (W. T. McKean). Related to *A. metea* Ckll. from Wyoming but considerably smaller with hair on thorax not black, the stigma paler and the abdomen metallic. Also related to *A. amplificata* Ckll. from Steamboat Springs, Colorado, but the clypeus is not so yellow, the hair in the region of the antennæ is all black, the stigma is paler and smaller, and the third cubital cell is much more extended beyond second recurrent nervure, this being due to the position of the recurrent nervure, not to the length of the cell. The abdomen is more robust than in *A. amplificata* and lacks the narrow white hair-bands at sides of tergites.

Andrena (Trachandrena) veris Cockerell, sp. n.

Female (type). Length 10 mm.; black, including mandibles, antennæ, tegulæ and legs; hair of thorax above abundant, bright ferruginous, of head and other parts of thorax also red but not so bright; head ordinary; malar space linear but distinct; process of labrum short, truncate; clypeus densely and coarsely punctured, without a smooth median line; third antennal joint much longer than fourth and nearly as long as fourth and fifth together; facial foveæ reddish, rather broad, narrowly separated from orbits, hard to see on account of long overlapping red hair; a small shining space at each side of ocelli; mesothorax dull and densely punctured, only the posterior disc somewhat shining, with large coarse punctures; scutellum coarsely and densely punctured; area of metathorax large; triangular, with about eight very coarse more or less wrinkled rugæ, and little ones at sides; wings greyish hyaline, the apical margin darker; stigma large, very dark reddish, nearly black, varing to dusky red; nervures fuscous; basal nervure meeting nervulus; second cubital cell broad, receiving recurrent

nervure well beyond the middle; legs with reddish hair; hind tibial scopa pale red; spurs red; abdomen broad convex, shining, with pale fulvus hair-bands at sides of second tergite, broadly interrupted in middle on third, and narrowly interrupted or practically entire on fourth; apical fimbria clear orange-fulvous; second tergite in middle depressed about or nearly two-thirds; third more than half but considerably less than two-thirds.

Male. Length 9-10 mm.; more slender; antennæ long, entirely black; third joint a little shorter than fourth, fourth conspicuously shorter than fifth; stigma dusky red with dark margin; second tergite in middle depressed less than half; stipites very broad; hind coxæ with a conspicuous tubercle at apex.

Colorado; Boulder, at flowers of Salix, a pair taken mating May 6, 1933 (H. W. Campbell). Three other males and a female were taken by Mr. Campbell on the same date, and Miss Helen I. Gibbons took a female in Gregory Canyon, Boulder, May 6. The female looks very like *A. cyanophila* Ckll. (a late summer species) but the mesothorax is quite different. It is very near *A. indotata* Viereck but my specimen of that (from Saskatchewan) has a red stigma and the abdominal depressions are not so broad. The male is very near *A. davisiana* V. and C. but distinguished by the second tergite; it also resembles *A. grossulariæ* V. and C. but the tegulæ and stigma are quite different *A. tacitula* Ckll. is also allied.

Andrena (Opandrena) cressoni transformans Cockerell, sp. n.

Female. Very close to *A. cressoni* Robertson, agreeing in most of its characters but differing thus (comparison with a topotype *cressoni* received from Robertson): Face considerably broader (its width about 2.4 mm.); the convex clypeus shining, with very strong punctures which are largely absent in middle, especially toward the apex; mesothorax more shining, very distinctly punctured; tegulæ larger, clouded with blackish; stigma smaller and more dusky; wings hardly at all yellowish; nervures fuscous; hind basitarsus broader, pure black; hair at end of abdomen pale reddish, the hair fringing fifth tergite shining silvery.

Colorado; Boulder, June 8, 1933 (Helen P. James). I treat this as a subspecies, having only one specimen, but I suppose it to be a segregate which has taken to a different food-plant; a case similar to that of *A. parnassiæ* derived apparently from *A. peckhami*. It is at any rate readily recognizable. The type collected only a little pollen consisting of round bright lemon-yellow grains, but there are also very much smaller elongate

pale yellow grains, which might come from Draba or some related plant. The pollen collected by the topotype *A. cressoni* resembles the small grains referred to. According to Robertson's list *A. cressoni* is a frequent visitor to various Cruciferæ.

ANDRENA OPACIVENTRIS Cockerell

The type (female) is from Claremont, California, and has the abdomen perfectly opaque. One taken at Riverside, Calif., at *Salix lasiolepis* Benth., Feb. 6 (Timberlake), has the abdomen moderately shining and the hind basitarsi more slender. A specimen from Boulder, Colorado, April 15 (E. R. Becker), more closely resembles the type but the abdomen is slightly shining.

Osmia angustipes Cockerell, sp. n.

Male. Length about 8.5 mm., anterior wing 6.3 mm.; yellowish green with tegulæ and legs largely metallic; hair of head, thorax, and legs long and white, without black hairs intermixed, except on upper part of mesopleura where there is a certain amount of dark hair; abdomen with thin long white hair on first tergite, very short white hair on second, remaining tergites with mainly black hair but very thin; antennæ entirely black, flagellum quite simple, not nearly so long as in *O. integrella* Ckll.; apical tooth of mandibles long; clypeus dull and excessively densely punctured under the rather dull white beard; vertex and mesothorax dull; scutellum shining between the dense punctures with no smooth line; area of metathorax dull; wings rather strongly brownish; marginal cell with no distinct dark cloud but its apical part and beyond infuscated; basal nervure meeting nervulus; second cubital cell receiving first recurrent nervure far from base (the distance about equal to first intercubitus) and second nearer apex; tarsi not modified, the apical joint rufescent; abdomen shining olive-green, the depressed shining margins of tergites quite broad; sixth tergite with a broad notch, seventh sharply bidentate, the teeth rather close together; venter simple except that the third sternite has a V-like emargination, densely fringed with rather long pale orange hairs; stipites stout, broadly rounded at end.

Colorado; Boulder, April 21, 1833 (H. W. Campbell). In my table runs to near *O. pseudamala* Ckll., but the longer, more slender hind tibiæ readily distinguishes it from that species. It is easily known from *O. cordata* Rob. by the broad shining apical margins of tergites; from *O. simillima* Sm. it is known by the unmodified flagellum. It is very like *O. coloradensis* Cresson

but is easily separated by the black hair on apical half of abdomen and the less robust hind tibiæ. The metallic legs at once separate it from *O. seneciophila* Ckll. which has similar hair on head and thorax.

Spinoliella meliloti Cockerell

New Mexico; near Abeytas, both sexes at flowers of *Parosela scoparia*, August 26 (Timberlake).

Nomia californica Cockerell

Arizona; South entrance to Petrified Forest National Monument, at flowers of *Guetierrezia sarothræ*, three females, Aug. 27 (Timberlake).

Xenoglossodes eriocarpi (Cockerell)

Idaho; Fort Hall, female, July 21 (Louise Ireland).

Anthophora texana Cresson

Colorado; Denver, both sexes at purple aster, Oct. 1 (Helen Gibbons). New to Colorado.

Note on the Tarantula Hawk Wasps

Some observations were made, August, 1933, on two species of tarantula hawk wasps, *Pepsis chrysothemis* Lucas and *Pepsis cinnabarina* Lucas at Twenty-nine Palms, California. Whole bunches of muscat grapes had been attacked by these wasps and the juice had been sucked from them so that nothing was left but the dried skin and seeds. It is known that these insects feed on ripe figs and peaches that have fallen to the ground or upon the fruit that has previously been attacked by birds; but no record has been made, to my knowledge, of their feeding on sound grapes.

Poison liquid baits as well as poisoned fruits had been used with little or no success. The baits would soon dry out because of the dry climate, thus rendering them no longer attractive to the tarantula hawks. Ripe melons that had been cracked open were especially attractive food for the wasps, and many were trapped and killed in this manner; but their breeding ground on the desert is so extensive that little control was obtained through this method.—H. L. McKenzie, Citrus Experiment Station, Riverside, California.

TWO COLEOPTEROUS FAMILIES NEW TO MEXICO

BY HOWARD E. HINTON

Berkeley, California

While working up some of the material collected by Mr. R. L. Usinger and the writer in Central Mexico during the summer of 1933, I found three species of remarkable beetles. One of these proved to be undescribed, and all three represented families which had not been heretofore recorded from Mexico. The author is indebted to Dr. E. C. Van Dyke and Mr. E. Gorton Linsley for their generous assistance in many of the problems encountered.

GEORYSSIDÆ Latr.

This small anomalous family of semi-aquatic beetles contains some thirty-one species (1932) all in the widely distributed type genus, *Georyssus* Latr. Four species have been made known from the western Hemisphere. *G. pusillus* (1852) and *G. californicus* (1874) have been described from North America by Leconte, *G. minor* (1882) from Guatemala by Sharp, and *G. humeralis* (1923) from Brazil by Pic.

The species taken by us, *G. minor* Sharp, was described from a unique specimen collected in Guatemala. Because the original description is none too ample, I have seen fit to redescribe the species from my larger series of fifty-one specimens. All specimens were taken in damp trash piles near the margins of the streams at Tejupilco, District of Temascaltepec, in June, 1933.

GEORYSSUS MINOR Sharp

Georyssus minor Sharp, Biol. Centr.-Am. 1, 2, 1882, p. 141, t. 4, f. 17.

Zaitzev, Col. Cat. 1910, part 17, p. 51.

Small, convex, black, opaque. Head convex, coarsely, irregularly sculptured; eyes convex, moderately finely faceted; first segment of antennæ as wide and four-fifths as long as club, second segment not half as wide or long as first, third narrow, half as long as second, fourth more than three times as long as third, fifth one-third as long as fourth, sixth slightly longer than fifth; segments three to six inclusive are very narrow in comparison with basal segments, club sparsely clothed with very long soft pubescence, other segments glaberous; mouth parts testaceous, maxillary palpi with last segment four times as long as preced-

ing, stout, subsecuriform, accuminate; labial palpi long, last segment with outer edge straight; inner edge arcuate; mandibles accuminate, a moderately small tooth on inner edge; labrum strongly arcuate.

Prothorax unevenly convex, wider than long, sides rounded, converging toward anterior margin which is slightly emarginate; anterior and posterior angles rounded; lobed anteriorly, very strongly, unevenly tuberculate, a median impressed line extending from anterior to posterior margin; disk finely rugulose, sparsely, coarsely punctured.

Elytra convex, sides suddenly and strongly converging near apical end, humeri gibbous, a row of small tubercles near lateral margins, punctures on disk coarse, as wide or wider than interstices.

Ventral surface roughly irregularly tuberculate, median portion of meso- and metasternum not tuberculate. Legs evenly, finely, sparsely setose; posterior tibiæ with two short unequal spurs.

In the series before me, the sculpturing on the disk is very variable. A few specimens have the coarse, conspicuous punctuation mentioned by Sharp, a few have the disk only finely rugulose, and in some examples there is a coarse and scanty tuberculation on the disk. The extent of the median impression on the prothorax is also very variable.

Cyathoceridæ Sharp

This peculiar family has long been known by a single species, *Cyathocerus horni* Sharp, recorded from Guatemala and Panama. In this paper I record the above species from Mexico and make known a second species in this family.

Cyathocerus horni Sharp

Cyathocerus horni Sharp, Biol. Centr.-Am. 1, 2, 1882, p. 144, t. 4, f. 18; Supp. 1887, p. 775.
Zaitzev, Col. Cat. 1910, part 17, p. 48.
Sharp and Muir, Trans. Ent. Soc. Lond., 1912, p. 531, figs. 127.

A series of thirty specimens were taken from damp trash piles left in certain protected corners of a canyon by the alternate rising and receding of the river. These specimens agree in all respects with the description given of *C. horni* by Sharp. However, I wish to call attention to the figure, (Biol. Centr.-Amer., 1, 2, 1882, t. 4, f. 18), which is incorrect in one detail. The vertex of the head, which is similar in sculpturing to the

anterior portion of the prothorax, is drawn as part of the prothorax.

Cyathocerus bufo Hinton, n. sp.

Small, convex, light-brown, opaque. Head strongly, irregularly sculptured, front perpendicular, eyes widely placed at sides of head near top; margins over eyes strongly produced and slightly reflexed forming a shield over the basal part of eyes and antennæ; a short longitudinal impressed line bordered by carinæ between the eyes; eyes coarsely faceted, more than hemispherical, partly projecting above the pronotum; antennæ distinctly shorter than the width between the eyes; clypeus tranverse, truncate, rugulose; labrum wider than long, sides slightly rounded and converging strongly toward apex which is truncate.

Prothorax slightly more than two times as wide as long, sides converging toward posterior margin, slightly constricted at basal one-fourth; anterior angles much produced and acute, posterior angles obtuse; base slightly produced at middle, anterior margin produced at middle and bi-arcuate on each side of produced portion; very unevenly convex with four large tubercles on disk.

Elytra nearly as broad as long, widest at humeri, suture barely raised apically, each elytron with three very strongly raised costæ which are slightly sinuate at basal one-fifth and strongly interrupted twice in basal half, then regularly interrupted and continuous to apex as a row of smaller tubercles; at middle of epipleura there is an extremely abrupt sinuation in which the extremity of the retracted hind femur reposes.

Ventral surface strongly, evenly rugulose; prosternal process reaching middle of anterior coxæ, impressed along median line, emarginate at end for reception of acute, produced mesosternal piece; legs slender, short, setose, darker at apex of femora and base of tibiæ; posterior tibiæ less than a third longer than tarsi. Length: 2 mm.; width, 1.2 mm.

Type (No. 3748, Mus. Calif. Acad. Sci.), and three paratypes collected by Mr. R. L. Usinger and the writer at Tejupilco, District of Temascaltepec, altitude 3960 feet, in June 1933. In most structural details it is very similar to *C. horni*, but it differs in its larger size, lighter color, and much more strongly raised and irregularly interrupted costæ. The elytral suture in this species is only slightly raised apically, whereas in *C. horni* it is nearly as strongly raised as are the costæ. This species was also taken in damp frass piles in company with *Georyssus minor* and *C. horni*. Undoubtedly other species in this family will be found when the American tropics are more thoroughly collected.

NEW LONGICORNS FROM THE JAPAN EMPIRE

(Coleopt., Cerambycidæ)

BY J. LINSLEY GRESSITT

Stanford University, California

In this paper are described new species of Cerambycidæ from Japan, the Loochoo Islands and Formosa, based on material collected by the author, as well as by Entomologists in Japan. New species of three tribes of the subfamily Cerambycinæ are herein described. Thanks are due to Mr. Y. Miwa of Taihoku, to Dr. E. C. Van Dyke and Mr. E. Gorton Linsley of the University of California for their coöperation, and to Dr. M. Yano of Tokyo for specimens; also to Mr. E. P. Van Duzee for the use of literature and specimens at the California Academy of Sciences in San Francisco.

Tribe Callichromini Lacordaire

Genus Chloridolum Thompson

Chloridolum loochooanum Gressitt, n. sp.

Blue-green; legs and antennæ cyaneous, nearly purple, the former shiny; body below green, smooth, clothed with very fine silvery pubescence; impunctate.

Head smooth, shiny, blue-green, except for clypeus and labrum which are black, vermiculate-rugulose below eyes; genæ punctate; frons squarish and somewhat flattened; vertex deeply excavated behind transverse ridge. Antennæ in male one and two-thirds to two and one-fourth times as long as body, scape gradually thickened towards apex, third segment scarcely grooved above; in female reaching one-fourth their length beyond apex of body; scape punctate. Prothorax shiny, blue-green, with a dull, satiny spot on each side of mid-line on disk; surrounding region finely vermiculate-rugose; lateral tubercles smooth, acutely pointed. Scutellum blue-green, smooth, punctate, short and triangular. Elytra varying from blue to dark green; microscopically granulate, satiny in appearance, giving varying shades; narrowed posteriorly, surface smooth. Legs thin, anterior and middle femora slightly swollen; hind femora reaching about one-fourth their length beyond elytral apices, slightly longer in male; tibiæ briefly spurred internally at apices; first segment of hind tarsi one and one-third times as long as remaining segments united.

Length 17.5 to 23 mm.; breadth 4 to 5.5 mm.

Holotype, male, (No. 3781, Mus. Cal. Acad. Sci.); allotype, female (No. 3782, Mus. Cal. Acad. Sci.), and twenty-six paratypes collected near Gusuku, Amami-Oshima Island; 28°, 15′ N. Lat., Loochoo (Riu Kiu) Archipelago, Japan, July 10 and 11, 1932, by the author. Paratypes are deposited in the collections of Mr. E. Gorton Linsley, Mr. J. C. M. Gardner, Dr. M. Yano, Mr. M. Kato, the Imperial University of Taihoku, Formosa, the United States National Museum and that of the author.

This species differs from *C. thaliodes* Bates by its bluish colour, smaller size, smoother pronotum, more acute lateral tubercles and ungrooved third and fourth antennal segments. The species somewhat resembles *C. viridipenne* Pascoe, from Borneo. The specimens were found mating, fighting or running on logs of an unidentified species, on a timber trail, at an altitude of a few hundred feet above sea level.

Tribe Clytini Mulsant

Genus Xylotrechus Chevrolat

Xylotrechus yanoi Gressitt, n. sp.

Large, broad, shortened. Dark brown, marked with light-brown, reddish-brown and yellow; clothed with recumbent golden hairs.

Head two-thirds as broad as prothorax, vertical in front; reddish-brown, with thick golden pubescence on frons, middle of vertex, and narrowly on sides of head; a transverse black band on occiput; a single carina on frons which continues backward, giving off a pair of oblique branches between antennal supports, and ending on occiput; rugulose, deeply punctate on cheeks. Antennæ reddish-brown on first four segments, remainder duller; last seven segments not swollen or rounded at apices; fifth segment equal to first and third in length, longer than fourth or sixth. Prothorax large, broader than long, as wide as shoulders; finely granulate; blackish-brown, edged narrowly, anteriorly and posteriorly with yellow; clothed with golden-brown hairs, paler and longer below; a small yellow spot at external edge of coxæ. Scutellum short, rounded, swollen, minutely punctate; dark brown. Elytra with a reddish-brown band at base, which is broader externally and divided at suture; large portion behind this, extending nearly to last third of elytra, blackish-brown, marked with a very fine, partially interrupted yellow line curving from suture near scutellum to external margin near middle; behind this is a diamond-shaped band of yellow, one and one-half mm. wide at

suture and extending nearly to external margin as a point; remainder (apical third) buffy-brown; apices transversely truncated, external angle very slightly toothed. Ventral surface dark brown, punctate, clothed with sparse, pale, golden hairs; a yellowish-white spot on metepimeron; abdominal segments with broad yellow bands of equal width. Legs reddish-brown, femora not greatly swollen, hind femora reaching 2 mm. beyond apices of elytra; first segment of fore tarsi as long as second and third united. (Hind tarsi missing).

Length 17 mm.; elytra 10.5 mm.; breadth 5.7 mm.

Holotype, a unique, probably a male (in author's collection) taken in Higo, Kyushu, Japan, August 1917. From the collection of Dr. M. Yano.

Similar to *X. chinensis* in structure, but differing by its very short prothorax and elytra, finer antennæ, less swollen femora, and quite different markings.

Xylotrechus angulithorax Gressitt, n. sp.

Black, marked with pale yellow above and with white below.

Head black, granulated; with sparse pale hairs on frons and cheeks, underside more hairy; carinæ fused at ends near clypeus and on occiput, forming an internally rugulose and glabrous ellipse, and continuing posteriorly as a single raised keel to posterior margin. Antennæ black, brownish towards apices; third segment as long as first and longer than fourth, fourth and fifth subequal, remaining segments gradually shorter. Thorax with sides angularly produced near base; minutely rugulose; clothed with an irregular fine golden pile, giving faint pubescent markings, a triangular latero-dorsal yellow spot on each side at base; clothed below with short grey hairs, a white spot on each epimeron beside coxa. Scutellum short, broad, black, the apical half clothed with golden pile. Elytra black, clothed with sparse golden pile, and marked with five series of thin, golden fascia, nearly white in the female; the first is a pale basal fascia turned back at ends, before reaching shoulders; the second consists of a short oblique spot on the disk, behind the decurved end of the first; the third is a narrow line beginning near the suture just behind the scutellum, continuing posteriorly, edged with chestnut-brown, diverging slightly, to near middle of elytra, where it turns at right angles and extends to near external margin, the end being nearly or entirely broken off as a spot; the fourth consists of two spots, placed half-way between the middle and apex, the inner one larger, triangular, placed anteriorly, adjacent to suture, the other a small dot placed closer to external margin than suture; the fifth is a triangular pubescent spot at apex, extending obliquely an-

teriorly from external angle of truncature to suture; apices semi-obtusely truncated, external angle briefly toothed, sutural angle rounded. Meso- and metasterna clothed with sparse, short grey hairs; mesepisternum with a small, thin white spot; metepisternum with a small anterior, and a larger, rectangular, posterior white spot. Abdomen shiny black, posterior lateral margins of first three segments white. Legs robust; femora thickened; fore and middle legs clothed with grey hairs, hind legs shiny black, thinly clothed, hind femora reaching to slightly beyond elytral apices; first segment of front tarsi as long as second and third united, first segment of hind tarsi one and one-half times length of remaining segments.

Length 12.5—15 mm.; breadth 3.5—4.2 mm.

Holotype, male (No. 3783, Mus. Cal. Acad. Sci.), and allotype, female, in author's collection collected near Gusuku, Amami-Oshima Island, Loochoo Archipelago, July 10, 1932, by the author.

XYLOTRECHUS BUQUETI Lap. et Gory[1]

subspieces **aureobrunneus** Gressitt, n. subsp.

Cylindrical, subparallel, narrow; clothed with a golden pubescence.

Head and thorax greenish brown, the pronotum with a median longitudinal black stripe, broadened near posterior margin, and a round black spot on each side of disk. Elytra chestnut-brown, lighter near the base and external margin; marked with five series of bands or spots of golden pubescence; the first basal, narrow, crossing the scutellum; the second consists of a nearly round spot on the disk of each elytron just behind the shoulders; the third consists of a curved line (J-shaped on the left elytron), commencing just behind the scutellum adjacent to the suture and recurving slightly before middle of elytra and nearly reaching external margin; the fourth is a transverse band slightly behind the middle, which does not extend to the external margin, and is suddenly broadened at the suture; the fifth consists of a spot covering the internal apical angle of each elytron, the outside edge of the spot being rounded. Meso- and metathorax and abdomen dark brown, clothed with dull golden pubescence particularly on the epimera, the metasternum and the lateral and posterior-ventral surfaces of the abdominal segments; a yellow spot on the mesepimeron. Legs dull chestnut brown, hind tibiæ and tarsi nearly ferrugineous.

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[1]Hist. Nat. Icon. Ins., Coleopt., p. 86, pl. 16, f. 99, (1841).

Head with eyes closely approximate in front; a double carina on frons, the two constituents of which unite towards the base of the clypeus; a small median carina on occiput; carinæ edging the frons prominent at margin of eyes. Antennæ dull chestnut brown, clothed with minute pale scales, fine and short, reaching just beyond base of elytra; scape longer than third segment; fourth to seventh segments subequal in length, eighth to eleventh subequal. Prothorax subglobular when viewed from above, disk not swollen; very slightly longer than broad; apex as broad as base; width at middle subequal to width of elytra at base. Scutellum short and broad. Elytra long, very slightly narrowed towards apices; apices transversely truncated; external angle of truncature finely toothed. Legs short, hind femora not quite reaching to apices of elytra; first segment of middle tarsi nearly as long as remaining segments united; first segment of hind tarsi only slightly longer than remaining segments united.

Length 12 to 14 mm., width 2¾ to 3½ mm.

Holotype, female, (No. 50058, U. S. National Museum, Washington, D. C.), collected at Kuraru (Koshun), Formosa, on June 7, 1932, by Mr. Y. Yano; allotype, male, in the author's collection and one paratype in the collection of E. Gorton Linsley, the latter two collected at Kisan, Formosa, June 4, 1932, also by Y. Yano.

This subspecies, which is possibly a distinct species, differs in several respects from the typical form from continental Asia. The coloration of the head and thorax and the fasciæ of the elytra are golden instead of grey, and the second elytra fascia consists of a round spot instead of an oblique line; the average size is greater, and the legs and antennæ are more brightly colored.

Genus Cyrtoclytus Ganglbauer

Cyrtoclytus formosanus Gressitt, n. sp.

Light brown, marked with dark brown and yellow. Body clothed with long, erect, golden-brown hairs, shorter and sparser on the pronotum and tarsi, lacking on antennæ, thickest on under side.

Head rugulose, dark brown; thickly clothed with adpressed golden pubescence on frons, except for mid-line, and narrowly on posterior margin. Antennæ fulvous, thick, not reaching second quarter of elytra; scape punctate, thick at apex, second segment globular, a few sparse bristles on first few segments. Thorax

globular, not quite as broad as shoulders; dark brown, rugulose, sparesly clothed with short golden hairs, also with long upright hairs anteriorly and ventrally; posterior margin yellow, except for an interruption in middle. Scutellum triangular, pointed, brown, edged with short pale hairs. Elytra broad at base, slightly swollen on disk near base, rugulose, apices rounded; base light brown, marked with three yellow bands of recumbent hairs, the first very narrow, slightly oblique, a short distance from base, reaching neither suture nor external margin, edged behind with a broader dark brown band; second wide, complete, strongly oblique, placed near the middle of elytra at suture, extending obliquely posteriorly, becoming broader towards external margin; the third apical, transverse, wide; anterior to the second yellow stripe is an oblique, dark-brown stripe about twice the width of the yellow stripe and parallel with it, slightly broader at the suture where it forms an angle of about 100 degrees; there is also another dark brown band immediately behind the central yellow band, about the same width, broader at the suture; region between this and apical yellow band reddish brown. Ventral surface of body dark brown, lighter on abdomen; mesepisternum with an oblique yellow band; first two abdominal segments banded posteriorly with yellow. Legs tawny brown, femora and tibiæ with long erect brown hairs, tarsi with shorter, less erect bristles; tarsi broad.

Length 15 mm.; breadth 3.75 mm.

Holotype, female, a unique, in author's collection, taken by the author near Numanohira, Arisan, Formosa, at an altitude of about 7,400 feet, on June 2, 1932.

This species is closely related to *Cyrtoclytus caproides* Bates and also to *Clytus callizonus* Gahan which is probably a Cyrtoclytus. This may possibly be the species recorded from Formosa as the latter Indian species, but it is evidently distinct.

Tribe Tillemorphini (Epipedocerini)

Genus Halme Pascoe

Halme eburneocinctus Gressitt, n. sp.

Small, elegant, shiny; red, green, blue, white and black.

Dorsal surface of the body and antennæ clothed with very long, erect black bristles, nearly invisible without a magnifying glass; ventral surface of body, posterior margins of elytra and legs, except tarsi and metatibiæ, clothed with slightly shorter and sparser white bristles; metatibiæ with reddish-brown bristles. Head and prothorax dark shiny green, except for mouthparts which are reddish brown; antennæ black, last six segments slightly silvery pubescent; scutellum covered with thick silvery pubescence; elytra

with basal fifth, except near suture, red, remainder dark steely blue with a greenish tinge; a prominent oblique ivory-white raised line slightly before middle of elytra extending from near external margin to within one-third of a millimeter of suture; meso- and metathorax red, with a narrow oblique line on the mesepisternum and a transverse spot on the posterior lateral surface of metathorax of silvery white pubescence; abdomen dark steel-blue; legs dark red, much brighter on clavate portions of femora. Head densely punctate, except on center of occiput; frons broad, slightly concave between antennal supports; clypeus short and broad. Antennæ three-fourths as long as body, last four segments shortened and broadened, scape finely punctate, following three segments rugulose-punctate; second segment half as long as scape, third, fourth and fifth segments subequal in length, and each slightly shorter than scape; sixth and seventh segments slightly shorter, subequal, remaining segments shorter and subequal. Prothorax grossly punctate except on sternum; narrowly constricted at base, broadest at middle and abruptly narrowed posteriorly, anterior margin broader than posterior, the latter irregular. Scutellum long; narrow posteriorly. Elytra twice as long as broad, rather constricted and dorsally compressed slightly before the middle, rounded posteriorly; basal half deeply but sparsely punctate, posterior portion more finely and sparsely punctate. Ventral surface of body moderately finely and sparsely punctate, least so on abdomen. Legs rough, except on clavate portions of femora which are smooth and shiny; femora exceedingly clavate; fore femora clavate for two-thirds of their length, middle and hind femora for slightly less than one-half their length.

Length 6 mm.; breadth (at widest portion of elytra) 1¾ mm., (at shoulders) 1½ mm.

Holotype, a unique, probably a female, in author's collection. taken by the author at Koripapono, near Daibu, in the southeastern part of Formosa, on April 17, 1932; found running on a dead branch.

This species is probably closest to *Halme chatterjeei* Gardner. It differs, however, in having the prothorax more constricted at base, the surface more glabrous and punctate, the body clothed with long erect hairs, and the elytra compressed and constricted near middle, with the fascia oblique. The latter species is not so brightly colored.

Japanese Names

1. Chloridolum loochooanum Gressitt—Oshima-midori-kamikiri- (mushi)
2. Xylotrechus yanoi Gressitt—Yano-tora-kamikiri

3. Xylotrechus angulithorax Gressitt—Amami-tora-kamikiri

4. Xylotrechus buqueti aureobrunneus Gressitt—Buke-tora-kamikiri

5. Cyrtoclytus formosanus Gressitt—Taiwan-kisuji-tora-kamikiri

6. Halme eburneocinctus Gressitt—Aokubi-kamikiri

A European Longicorn New to California (Coleoptera Cerambycidæ)

During the past year the South European longicorn, *Leptidea brevipennis* Muls.* has been discovered in several localities in California. The species belongs in the tribe Psebiini which will come in our fauna between the Necydalini and Molorchini. The tribe is characterized by the abbreviated elytra, short mandibles curved at the base, and the sessile, flattened abdomen broadly joined to the metathorax. For the benefit of those who may not have access to the original description, a brief diagnosis is here appended:

Leptidea brevipennis Muls. Slender, flattened, brownish piceous. Head nearly flat between the antennæ; front short; eyes reniform, finely granulate; antennæ slender, scape moderately stout, reverse cone-shaped, second segment small, third and fourth segments subequal, each about three times as long as second; fifth segment not quite as long as third and fourth together, remaining segments decreasing in length toward apex. Prothorax rufo-testaceous, broader than long, disk sparsely punctured, sides glabrous. Elytra short, usually attaining the middle of the abdomen, slightly dehiscent, apices rounded, punctation not coarse, finer and sparser apically. Legs rufo-testaceous to piceous, short; posterior tibiæ curved; tarsi short, segments cylindrical, third segment not dilated. Length 3-5 mm; breadth .75-1 mm.

The first California specimens of this species were taken at Santa Barbara, Calif., June 1932, and were reared from *Quercus agrifolia* by Mr. A. T. McClay who submitted the specimens to me for determination. Additional examples were captured at El Monte and Temple, Calif., July 7-10, 1932, by Mr. Kenneth Sloop. Mr. Sloop's specimens were taken on the Persian Walnut, *Juglans regia.* It is possible that *L. brevipennis* may have been introduced into California on this latter host.—E. Gorton Linsley.

* Mulsant, Col. France, Long. p. 105, t.2, f.3, 1839.

NEW DISTRIBUTIONAL AND HOST PLANT RECORDS OF HETEROPTERA FOR CALIFORNIA. I.

BY R. L. USINGER

Oakland, California

Euptychodera corrugata (Van D.). The type of this species was from Ft. Collins, Colorado. A very light colored and heavily pubescent male and a young nymph are at hand from Marysvale, Utah, Aug., Wickham, together with a fine series of six females and two males equally heavily pubescent but quite variable in color, collected by E. D. Ball in the Baboquivari Mts., Ariz., on Aug. 17, 1932. In addition there are two females which are very much darker, smaller and somewhat narrower than the female type. One of these, together with the Colorado, Utah, and Arizona specimens, is in the Academy Collection. It was collected by Mr. E. G. Linsley at Uvalde, Texas, in June, 1930. The other has kindly been presented to the author by Mr. K. D. Sloop who swept it from alfalfa at Pasadena, Calif., in April, 1932. This is obviously a very widespread species and will doubtless turn up more frequently, with careful collecting, throughout the Great Basin and bordering areas.

Aradus insoletus Van D. A long series beaten by E. G. Linsley from beneath the loose bark of *Salix* sp. on the floor of the Yosemite Valley, Calif., in May and June, 1931.

Gargaphia gentilis Van D. Collected by Mr. Van Duzee on Carmen Island in the Gulf of California on *Solanum hindsiana.* The author found it in abundance on *Cercocarpus* sp. at South Fork, Tuolumne Co., Calif., in July, 1928, at an elevation of approximately 3000 ft.

Reduvius senilis Van D. A specimen has been received from Sequoia National Park taken by Mr. A. T. McClay on July 18, 1931. The species was originally described from Arizona and appears not to have been recorded since. The California specimen agrees perfectly with the type except that the markings are a bit more distinct, especially on the hemelytra.

Phytocoris nigrifrons Van D. Taken in numbers by the author along the trail to the Lookout at the upper end of Fallen Leaf Lake, Eldorado Co., Calif., in July, 1932, on White Fir, *Abies concolor.*

Platylygus vanduzeei Usinger. The type of this species was from the South Rim of the Grand Canyon, Arizona, and paratypes were taken by the author under similar conditions at Mesa Verde National Park in Southwestern Colorado. Still another locality on the border of the Great Basin area may now be added. Mr. E. P. Van Duzee and the author took a series of specimens on the Sherwin Grade near Bishop, Inyo Co., Calif., on June 22, 1929. These specimens agree with the type in genital characters but are a little less distinctly maculated than the Arizona and Colorado specimens.

Dacerla inflata Uhl. A long series taken by the author on *Lupinus* sp. at Mokelumne Hill, Calaveras Co., Calif., on May 18, 1931. This species has heretofore been associated with the fauna of *Pinus jeffreyi* in California, but the single catch recorded above surpasses by far the total number of specimens taken on pine during the past few years.

Lopidea eremita Van D. Described from Monserrate Island in the Gulf of California, the specimens being taken on "palo tinto" (uña de gato). The author has received a nice series of this species from C. C. Searl who took them in San Diego Co., Calif., in June of 1928 and 1929. One specimen bears a supplementary label, "Borego Vy. Smoke Tree" and the rest have labels reading "Yaqui Wl. Ironwood."

Orthotylus contrastus Van D. Described from a single female example taken at an elevation of 8000 ft. on Mt. Timpanogos, Utah. The author has beaten several examples, all females, from *Populus tremuloides* at the lower end of Fallen Leaf Lake, Eldorado Co., Calif., elev. 6000 ft., during July, 1929 and 1932. The specimens have been compared with the type by E. P. Van Duzee and have been deposited in the collections of Dr. H. H. Knight, the Calif. Academy of Sciences and the author.

Reuteroscopus falcatus Van D. Beaten in great numbers by the author from *Populus tremuloides* at the lower end of Fallen Leaf Lake, Eldorado Co., Calif., in July, 1929 and 1932.

THREE NEW SPECIES OF THRIPS LINNÉ FROM THE WESTERN UNITED STATES

BY J. DOUGLAS HOOD

University of Rochester

The types of the new species described below are in author's collection. The illustrations were made by Miss Helen Rearwin and Miss Inez D'Amanda.

Thrips pallidicollis Hood, sp. nov.

Cut 1 (figs. 1-4).

Female (macropterous). Length about 1.1 mm. General color dark brown, head and abdomen darker and blackish, pterothorax distinctly paler than either; *prothorax pale yellowish* abruptly lighter than head; legs light yellowish brown, excepting tarsi and apices of femora and tibiæ, which are yellow; fore wings pale yellowish brown, scarcely paler at base; antennæ blackish brown, with apex of segment 2, all of 3, and usually the basal portion of 4 yellowish; all body and wing bristles yellowish brown; ocellar pigmentation red.

Head about 1.2 times as wide as median dorsal length, about as long as pronotum, broadest midway between eyes and base, the transverse anastomosing lines distinct; cheeks rather strongly arched; vertex flattened, not forming an overhanging angulation but sloping nearly evenly from ocelli to frontal costa, this last deeply and somewhat acutely notched; interocellar and postocellar bristles short, subequal, somewhat longer than postoculars but scarcely as long or as heavy as the median pair on posterior margin of prothorax; ventral surface of head with the two pairs of bristles near bases of antennæ not attaining apex of first antennal segment. Eyes about 0.54 as long as head, hardly 0.7 as wide as their interval, pilose as usual. Ocelli situated about opposite middle of eyes. Antennæ (cut 1, fig. 2) about 2.25 times as long as head, of normal structure; segment 3 usually slightly longer than 6, the latter about 2.2 times as long as wide and 2.6 times as long as 7, the sense cone on its inner surface not abbreviated, surpassing apex of segment. Maxillary palpi three-segmented, as usual, the segments measuring 12, 10, and 18 microns respectively.

Prothorax about 1.6 times as wide as median dorsal length, with distinct, dark, equally-spaced, anastomosing lines of sculpture on notum, sides gently rounded, perhaps slightly converging anteriorly; bristles at posterior angles rather short, stout, and nearly straight, the inner pair 64 microns long, the outer pair 50 microns long; posterior margin with three pairs of bristles, the innermost pair subequal to midlaterals and somewhat longer and stouter than postocellars; other bristles on pronotum hardly equal to post-

ocellars, excepting one pair near anterior margin and two pairs at anterior angles. Wings of fore pair (cut 1, fig. 3) with about 22 bristles on costal margin, 4+3 at base of anterior vein and typically 1+1 near apex, and ordinarily about 9 on posterior vein (though varying from 8 to 11).

Abdomen of normal form; tergite 8 with the comb on posterior margin broadly interrupted at middle; posterior margin of tergite 9 with bristles of inner pair 100 microns long, outer pair 122 microns, lateral pair 112 microns; posterior margin of tergite 10 with bristles of inner pair 98 microns, outer pair 92 microns; sternites with the usual three pairs of long bristles on extreme posterior margin, but without accessory bristles.

Measurements of holotype (♀): Length 1.08 mm.; head, length 0.114 mm., greatest width (across cheeks) 0.139 mm., width across eyes 0.132 mm.; eyes, length 0.062 mm., width 0.038 mm., interval 0.056; prothorax, median dorsal length of pronotum 0.118 mm., greatest width 0.188 mm.; pterothorax, width 0.232 mm.; fore wings, length 0.698 mm., abdomen, greatest width 0.278 mm.

Antennal segments:	1	2	3	4	5	6	7
Length (microns):	24	36	49	43	38	47	20
Width (microns):	29	25	20	20	19	21	7

Total length of antenna 0.257 mm.

Described from eleven females, as follows: Colorado, Grant, July 19, 1916, sweeping, L. O. Jackson, 5♀♀ [*holotype* and *paratypes*]; Grant, July 21, 1916, sweeping, L. O. Jackson, 2♀♀ [*paratypes*]; Grant, July 24, 1916, sweeping, L. O. Jackson, 1♀ [*paratype*]. Utah, Currant Creek, July 22, 1917, sweeping flowers at an altitude of 8,000 ft., James Silver, 3 ♀♀ [*paratypes*].

The dark color and the broadly interrupted comb on the posterior margin of tergite 8 ally this new species with *magnus*, *spinosus*, *varipes*, *madronii*, and *fuscipennis*. The pale pronotum, however, is a thoroughly constant character serving to identify it readily. There is some variation in the number of bristles in the distal portion of the anterior vein, three of the specimens possessing an additional one at the apical two-fifths (on one wing only), making three bristles in all. The typical number is clearly two, however, while in all the allied species it is three. Another structural difference between this and the closely related *fuscipennis*, evident in a series of specimens, is the longer third antennal segment which usually exceeds the sixth in *pallidicollis* but which in *fuscipennis* is invariably shorter than the sixth

Thrips sieversiæ Hood, sp. nov.

Cut 2 (figs. 1-4).

Female (macropterous). Length about 1.4 mm. Color nearly uniform dark brown, with perhaps the head, prothorax, and tip of abdomen averaging somewhat darker; legs brown, with fore tibiæ, all tarsi, and both ends of hind tibiæ largely yellow; fore wings yellowish brown, darker at extreme tip; antennæ concolorous with body excepting segment 3 which is pale yellow in pedicel and shading to yellowish brown at apex; body and wing bristles yellowish brown; ocellar pigmentation orange-red.

Head about 1.31 times as wide as median dorsal length, about 0.81 as long as pronotum, slightly broadest across eyes, the transverse anastomosing lines dark and distinct; cheeks somewhat flattened; vertex flattened, not forming an overhanging angulation but sloping nearly evenly from ocelli to frontal costa, this last deeply and acutely notched; interocellar and postocellar bristles short, subequal, somewhat longer than postoculars but scarcely as long or as heavy as the median pair on posterior margin of prothorax; ventral surface of head with the two pairs of long bristles near base of antennæ, the inner pair much the longer and reaching beyond base of second antennal segment. Eyes about 0.57 as long as head and about 0.7 as wide as their interval, prominent because of their size but not distinctly protruding, pilose as usual. Ocelli situated slightly in advance of middle of eyes. Antennæ (cut 2, fig. 2) long, about 2.57 times as long as head, of normal structure, segment 3 slightly shorter than 6, the latter fully 2.6 times as long as wide and 2.4 times as long as 7, the sense cone on its inner surface short, not attaining apex of segment.

Prothorax about 1.46 times as wide as median dorsal length, with distinct, equally-spaced, anastomosing lines of sculpture on notum, sides gently rounded and distinctly converging anteriorly; bristles at posterior angles rather long and strong, only slightly curved, the inner pair about 84 microns long, the outer pair about 76 microns long; posterior margin with three pairs of bristles, the innermost pair longer and stouter than the others and subequal to midlaterals; other bristles on pronotum shorter and weaker. Wings of fore pair (cut 2, fig. 4) with about 22 bristles on costal margin, 4+3 at base of median vein and 1+1+1 in distal two-fifths, and usually 10 (9-12) on posterior vein.

Abdomen moderately broad; tergite 8 with the comb on posterior margin broadly interrupted at middle; posterior margin of tergite 9 with bristles of inner pair 114 microns long, outer pair 131 microns and lateral pair 148 microns; tergite 10 with bristles of inner pair 122 microns, outer pair 118 microns; sternites with the usual three pairs of long bristles on extreme posterior margin but without accessory bristles.

Measurements of holotype (♀): Length 1.43 mm.; head, length 0.110 mm., width across eyes 0.146 mm., width just behind eyes 0.138 mm., width across cheeks 0.145 mm.; eyes, length 0.063 mm., width 0.043 mm. interval 0.060 mm.; prothorax median length of pronotum 0.135 mm., greatest width 0.198 mm.; pterothorax, greatest width 0.272 mm.; fore wings, length 0.795 mm.; abdomen, greatest width 0.320 mm.

Antennal segments:	1	2	3	4	5	6	7
Length (microns):	27	41	54	45	37	56	23
Width (microns):	32	27	22	22	20	21	9

Total length of antenna 0.283 mm.

Male (macropterous). Length about 0.93 mm. Color and structure much as in female. Sternites 3-7 with transversely elliptical tympana, that on 3 about five times as wide as long; tergite 9 with two pairs of bristles in a nearly straight line across middle and a third pair of slightly longer bristles caudad and slightly laterad of the median pair.

Measurements of allotype (♂): Length 0.930 mm.; head, length 0.096 mm., width across eyes 0.140 mm., width just behind eyes 0.133 mm., width across cheeks 0.142 mm.; eyes, length 0.060 mm., width 0.041 mm., interval, 0.058 mm.; prothorax, median length of pronotum 0.116 mm., greatest width 0.188 mm.; fore wings, length 0.600 mm.; abdomen, greatest width 0.240 mm.

Described from seven females and two males taken at Grant, Colorado, July 19, 1916, by L. O. Jackson, on *Sieversia ciliata.*

In Priesner's key to the European species, if the abdomen be considered "ungewöhnlich breit", this runs to *robustus* and *dilatatus;* but in both of these segment 3 of the antenna is much narrowed apically. If, on the other hand, the abdomen be considered of normal breadth, this species runs to *paluster* and *menyanthidis;* but from these it differs in the short sense cone on segment 6 of the antenna.

Among the North American species, it takes a natural position near *fuscipennis,* agreeing with it and its relatives in having three pairs of small bristles on the posterior margin of the pronotum between the two large pairs at the posterior angles; in having the comb on the posterior margin of abdominal tergite 8 broadly interrupted at middle; and in having the fore wing provided in the distal half of the median vein with three instead of two bristles. It comes closest, perhaps, to *magnus,* a California species in which the sense cone on the inner surface of the sixth antennal segment is likewise short and scarcely attains the

tip of the segment. From *magnus*, however, it differs in having segment 6 of the antenna slightly longer instead of distinctly shorter than 3; in having segment 5 twice as long as 7; in having the antennæ, particularly segment 3, decidedly paler; and in having the fore wings pale brown and decidedly lighter than the body.

Thrips sambucifloris Hood, sp. nov.
(Cut 3, figs. 1-4).

Female (macropterous). Length about 1.3 mm. Color dark blackish brown, with red or orange-red pigmentation in pterothorax; legs blackish brown, with all tarsi, both ends of mid and hind tibiæ, and most of fore tibiæ pale grayish yellow; fore wings pale gray (nearly white) in basal fourth and dark brownish gray beyond, the veins darker; antennæ dark blackish brown, 2 darker than 1, 3 decidedly the lightest in entire antenna, grayish or brownish yellow and clouded with blackish brown in distal half, 4-7 dark blackish brown, 4 and 5 narrowly paler just beyond pedicel; body and wing bristles dark brown; ocellar pigmentation red.

Head about 1.27 times as wide as median dorsal length, about 0.92 as long as pronotum, broadest slightly behind eyes, the transverse anastomosing lines dark and distinct; cheeks rounded, slightly converging posteriorly; vertex flattened, sloping evenly from ocelli to a slight angulation above antennal base, the frontal costa acutely but roundly notched; interocellar and postocellar bristles sub-equal, distinctly longer than postoculars but scarcely as long or as heavy as the median pair on posterior margin of prothorax; ventral surface of head with the two pairs of bristles near bases of antennæ, the inner pair much longer and reaching beyond base of second segment. Eyes about 0.55 as long as head and about 0.8 as wide as their interval, prominent because of their size but not distinctly protruding, pilose as usual. Ocelli situated slightly in advance of middle of eyes. Antennæ (cut 3, fig. 2) about 2.37 times as long as head, of normal structure, segment 3 longer than 6, the latter about 2.36 times as long as wide and 2.6 times as long as 7, the sense cone on its inner surface surpassing apex of segment.

Prothorax about 1.26 times as wide as median dorsal length,* with distinct, equally-spaced, anastomosing lines of sculpture on notum; sides rounded and slightly converging anteriorly; bristles at posterior angles of moderate length, strong, somewhat curved, and conspicuous because of their dark color, the inner pair about 76 microns long, the outer pair 66 microns long; posterior margin with three or four pairs of small bristles between the two long

*The specimen figured (Cut 3, Fig. 1) has apparently been somewhat flattened by the pressure of the cover glass.

pairs at angles, the innermost pair much longer and stouter than the others and larger than the midlaterals, the latter stronger and longer than a pair on anterior angles and a pair on lateral fourth behind front margin; other pronotal bristles shorter, but conspicuous because of their dark color and large pale insertions. Wings of fore pair (cut 3, fig. 4) with 27-30 bristles on costal margin, 4+3 at base of median vein and 1+1+1 in distal two-fifths, and 13-14 on posterior vein.

Abdomen moderately broad; tergite 8 with the comb on posterior margin wanting in median third, this portion occupied by about six broad, indistinct crenations, as in the whole posterior margin of the basal tergites; posterior margin of tergite 9 with bristles of inner pair 86 microns long, outer pair 116 microns, lateral pair 124 microns, posterior margin of tergite 10 with bristles of inner pair 96 microns, outer pair 92 microns; sternites with the usual three pairs of long bristles on extreme posterior margin but without accessory bristles.

Measurements of holotype (♀): Length 1.32 mm.; head, length 0.126 mm., width across eyes 0.157 mm., width just behind eyes 0.150 mm., width across cheeks 0.160 mm.; eyes, length 0.070 mm., width 0.049 mm., interval 0.060 mm.; prothorax, median length of pronotum 0.137 mm., greatest width 0.200 mm.; pterothorax, greatest width 0.292 mm.; fore wings, length 0.915 mm.; abdomen, greatest width 0.328 mm.

Antennal segments:	1	2	3	4	5	6	7
Length (microns):	28	44	60	51	44	52	20
Width (microns):	32	27	22	23	21	22	8

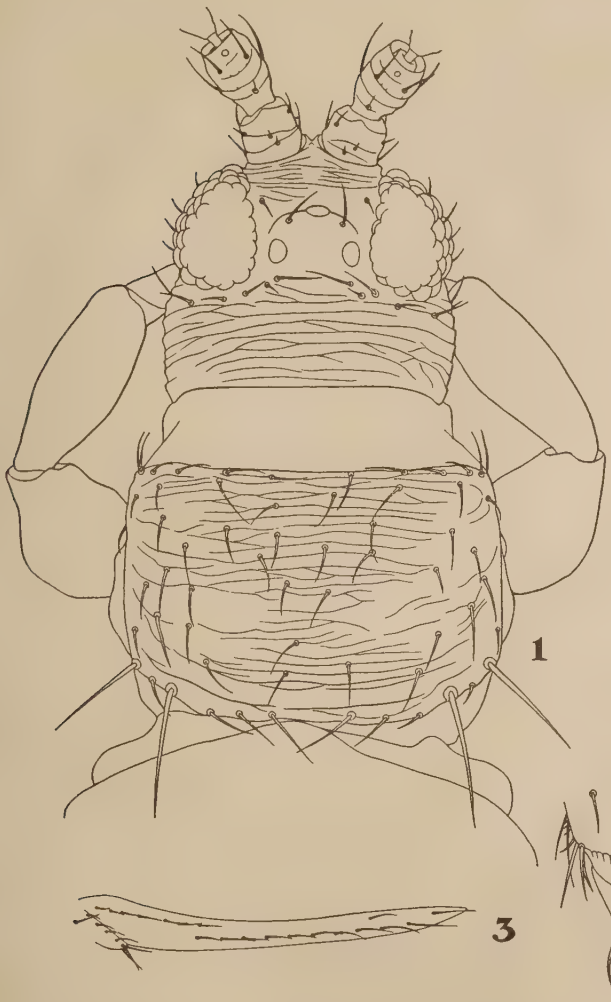
Total length of antenna 0.299 mm.

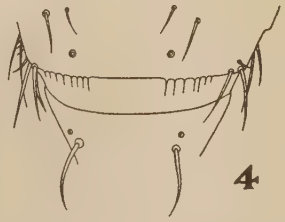
Male (macropterous). Length about 0.9 mm. Color somewhat paler than in female. Sternites 3-6 only with transversely elliptical tympana, that on 3 varying from three to five times as wide as long and that on 6 from about 2.5 to 3.3; tergite 9 with two pairs of bristles (the inner somewhat stronger) in a nearly straight line across middle and a third pair caudad and slightly laterad of the median pair.

Measurements of allotype (♂): Length 0.89 mm.; head, length 0.094 mm., width across eyes 0.136 mm., width just behind eyes 0.129 mm., width across cheeks 0.138 mm.; eyes, length 0.055 mm., width 0.042 mm., interval 0.052 mm.; prothorax, median length of pronotum 0.107 mm., greatest width 0.180 mm., outer bristles at posterior angles 0.048 mm., inner ones 0.056 mm.; pterothorax, greatest width 0.238 mm.; fore wings, length 0.668 mm.; abdomen, greatest width 0.212 mm.

Antennal segments:	1	2	3	4	5	6	7
Length (microns):	26	38	54	47	40	52	17
Width (microns):	27	25	19	20	19	20	7

Total length of antenna 0.274 mm.





Explanation of Cut 1.

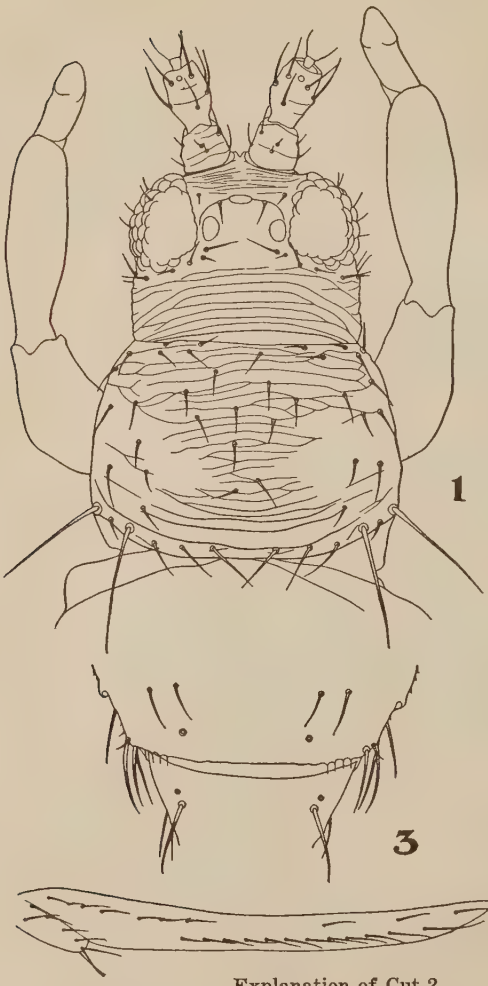
Thrips pallidicollis sp. nov.

Fig. 1—Head and prothorax, ♀, holotype (all leg bristles omitted).

Fig. 2.—Left antenna, ♀, holotype.

Fig. 3.—Right fore wing, ♀, holotype; diagram illustrating chætotaxy of veins.

Fig. 4—Portions of tergites 8 and 9, ♀, paratype, showing the interrupted comb on posterior margin of 8.



Explanation of Cut 2.

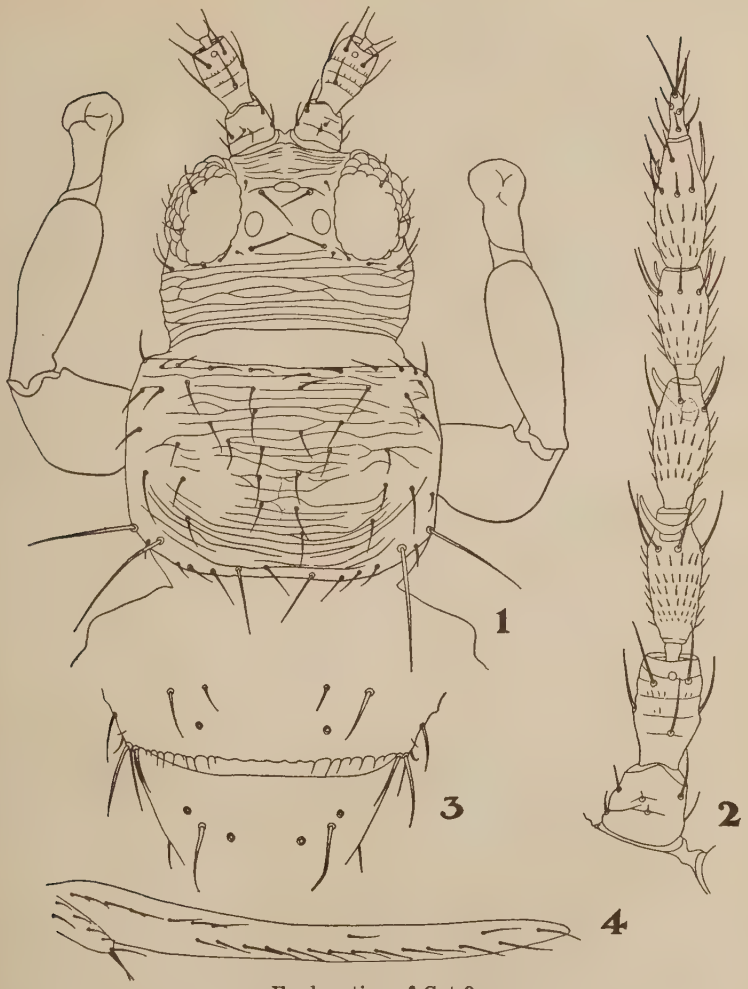
Thrips sieversiæ sp. nov.

Fig. 1.—Head and prothorax, ♀, holotype (all leg bristles omitted).

Fig. 2.—Left antenna, ♀, holotype.

Fig. 3.—Portions of tergites 8 and 9, ♀, holotype, showing the interrupted comb on posterior margin of 8.

Fig. 4.—Right fore wing, ♀, paratype; diagram illustrating chætotaxy of veins.



Explanation of Cut 3.

Thrips sambucifloris sp. nov.

Fig. 1.—Head and prothorax, ♀, holotype (all leg bristles omitted).

Fig. 2.—Left antenna, ♀, holotype.

Fig. 3.—Portions of tergites 8 and 9, ♀, holotype, showing the interrupted comb on posterior margin of 8.

Fig. 4.—Right fore wing, ♀, holotype; diagram illustrating chætotaxy of veins.

Described from two females and fifteen males taken by the writer near Korbel, California, July 28, 1927, in flowers of *Sambucus racemosa* L. [Hood No. 710]. Males were very abundant, but only two females were seen.

This is another species of the *fuscipennis* group. It is readily distinguishable from *pallidicollis* by the dark coloration and the greater number of wing bristles; from *sieversiæ* and *magnus* by the longer sense cone on the inner surface of the sixth antennal segment; from *spinosus* by the shorter interocellar bristles; and from *fuscipennis* and *varipes* by the lack of a tympanum on abdominal sternite 7 in the male, as well as by numerous details of body structure and color.

Attraction of Beetles to Tar

For the past two years I have noticed the attraction of certain beetles to fresh tar. The observations were made at Ben Lomond, Santa Cruz County, California, in May, June, and July of 1932 and 1933. The species most abundant was the Lucanid, *Platycerus agassizi* Lec, which assembled in large numbers near the fresh tar on dirt roads; all of the specimens but three were males and were caught either in the tar or flying at a height of six or eight inches above the tar. Diligent search in other nearby roads which had not been tarred availed nothing in the way of this Lucanid; I have now taken a very large series of this species while in previous years, before collecting in the tar, I obtained only two or three a season. The only other beetle found there in numbers was the Ostomid, *Temnochila virescens* (Fab.).—Lawrence W. Saylor.

Two New Records of Arizona Hemiptera

Largidea marginata Van D. described from a series of specimens taken by Mr. Van Duzee on scrub oak at Salida, Colorado, and apparently not taken since. The author beat a single specimen from *Pinus edulis* at Yavapi Point on the South Rim of the Grand Canyon, Arizona, on June 7, 1930. It has been compared with the type and agrees perfectly with the Colorado specimens.—R. L. Usinger.

A NEW SPECIES OF PLEOCOMA

Coleoptera-Scarabæidæ

BY EDWIN C. VAN DYKE

University of California, Berkeley, California

Pleocoma shastensis Van Dyke, new species

Broadly oval, robust, black, fimbriated and clothed beneath with long, very dark brown hair. Head coarsely punctured above; eyes very large and prominent; clypeus broadly emarginate at apex, the angles equilateral and obliquely reflexed; lobes of the genæ prominent, the anterior margins at right angles to head, the apices rather evenly rounded and the dorsum deeply triangularly sulcate, smooth and shining; frontal horn prominent, broad at base, acute at apex, and perpendicular; antennæ with the first segment long and robust; third slightly more than one-half the length of the first, the outer four segments with long lobes, about equal in length, which when approximated form the club, the seventh segment with an appendix not quite one-half the length of that of the eighth. Prothorax twice as wide as long, apex broadly emarginate, base arcuate, sides broadly rounded in front, more shallowly arcuate posteriorly, in the type subangulate behind middle, with rounded hind angles; disk moderately convex and rather finely, more or less densely, punctured, the basal area more finely punctured. Scutellum rather coarsely, densely punctured and clothed with the long dark brown hair on both disk and along margins. Elytra a little broader behind the middle; dorsum slightly depressed, distinctly impressed behind scutellum; sutural striæ faint in front but moderately well impressed behind, the two inner pairs of geminate striæ fairly distinct except posteriorly and more or less punctate, the others vague; general surface obscurely rugose and with a moderate number of fine, scattered punctures but appearing at first glance as rather smooth and shining. Body beneath quite densely clothed with long very dark brown hairs. Legs very robust, the middle and hind tibiæ about one-third larger than they are in *rickseckeri* and *behrensi*; tarsi also robust, the middle and hind tarsi shorter by at least 1 mm. than the tibiæ. Length 25 mm., breadth 13 mm.

Holotype male (No. 3779, Mus. Calif. Acad. Sci.) and seven paratype males collected by Dr. K. A. Salman near Pondosa, Siskiyou County, California (T 38 N, R 2 E). They were flying during a snowstorm over cut-over lands of the Shasta National Forest (S.E. of Mt. Shasta), October 22, 1932.

This interesting species is perhaps most closely related to *rickseckeri* Horn and *puncticollis* Rivers, agreeing with them as

regards the very dark color, four-segmented antennal club and rather short third antennal segment. It differs by having the hair a dark brown, not black, the scutellum rather coarsely punctured and clothed with hair, not almost smooth and without hair, and the middle and hind tarsi distinctly shorter than the tibiæ, not of equal length as in the others. It is slightly larger than *rickseckeri*, smoother and more shining, with the prothorax proportionally broader and the hind angles more broadly rounded, the clypeal angles in front more widely separated and less reflexed, and the frontal horn more or less equilateral and perpendicular, not transverse, bifid at apex and tilted backwards as is the case in *rickseckeri*. *Pleocoma puncticollis* Rivers is much larger, entirely black, with elytra much smoother, the prothorax of about the same general proportions yet broader posteriorly and with hind angles distinct and the disk very coarsely and closely punctured, the clypeal angles acute, much longer and more vertical, and the frontal horn similar to that of *rickseckeri*.

TWO OLD AND TWO NEW PLEOCOMAS

BY E. R. LEACH

Piedmont, California

In the forty-five years that have elapsed since Dr. George H. Horn in the Transactions of the American Entomological Society, January 1888, described *Pleocoma ulkei* from a single male and *Pleocoma conjungens* from a series of three, no other specimens, so far as I am aware, have been known until the past two months when, by a strange coincidence, both were rediscovered almost simultaneously, one in the field and the other in the museum.

On October 31st last in Nevada County, California, I took a short series of males that agreed with Dr. Horn's description of *ulkei*. A specimen was carefully compared with the type by Mr. Chas. Liebeck, who writes "I would not hesitate to call these two specimens one and the same species". The type is labeled "Utah" but its correctness has always been doubted by those familiar with the genus. And now that this species has been collected in California the doubt is more than justified,

as, to one knowing anything of the life history of the Pleocomas with their wingless and ponderous females "rooted to the soil" as it were, it is impossible to conceive of the same species occurring in both California and Utah. It is more logical to believe the locality was erroneously recorded on the type label, especially as some of the older collectors were notoriously careless in this respect.

The original description of *ulkei* is excellent and enables one to recognize the species at a glance. Dr. Horn was in doubt as to whether the "paler elytra are due to immaturity or represent the full color." It can now be stated that the "pale castaneous" color of the elytra is the color of the fully matured insect. The thorax is piceous as stated by Horn, making the species distinctly bololorous.

While studying the material in the collection of the California Academy of Sciences I discovered four male specimens collected by Dr. F. E. Blaisdell, Sr., at Mokelumne Hill, Calaveras County, California, that appeared to be *conjungens*. Mr. Liebeck again kindly compared a specimen with the type and says "it is sufficiently similar in its main characteristics to safely call it *conjungens*." Dr. Horn's three specimens were said to have been taken in the same flight at Santa Cruz, California. Mokulumne Hill is 120 miles from Santa Cruz across a hot, dry plain where no Pleocomas have ever been collected and where it is unlikely they could exist. This is another distribution that is difficult to understand unless the original locality is again in error. A careful study of a series from Santa Cruz will be necessary to settle the question definitely.

Pleocoma conjungens resembles *fimbriata* except in the antennal structure as mentioned by Dr. Horn. Another marked difference is in the shape of the prothorax. In *conjungens* it is widest at the base with prominent basal angles, in this respect approaching *P. tularensis* described herein.

Dr. Horn's paper contains still another indication of carelessness in recording localities. He reported *Pleocoma staff* from California. As a matter of fact is occurs in Oregon 200 miles from the California border.

Pleocoma oregonensis Leach, n. sp.

Form robust, rounded, bicolorous and shining above, clothed underneath with long dense golden brown hair; densely fimbriate on prothorax, lightly on elytra.

Head piceous, coarsely and densely punctured except on preocular lobes which are smooth, shining, wide and broadly rounded at apex; clypeus deeply emarginate, angles acute; cephalic horn moderate in size, round, and acute at apex. First segment of antennæ heavy and sub-conical; second transverse; third almost three times as long as the second and three-fourths as long as the first; sixth with a slight lobe; seventh with a lamina almost one-half as long as those on the eighth, ninth, tenth and eleventh segments which form the club.

Prothorax dark brown above, broadly rounded at the sides and basal angles, widest slightly behind the middle; disk bearing a slight transverse elevation before which is a large shallow depression one-half the width of the pronotum, forming a declivity in front; behind is a narrow, median, depressed, impunctate surface on both sides of which are smaller depressions; the surface, except as noted, finely and closely punctured, becoming coarser and confluent at the sides and front.

Scutellum clothed with long golden brown hair especially dense at the sides and hidden also by long thick hair of the same color from the base of the prothorax.

Elytra light red-brown; at humeri very slightly wider than the prothorax, widest at the middle; sutural striæ deeply impressed their entire length, not widened at apex, the four pair of geminate striæ distinctly but not deeply impressed, fading out at the apex.

Legs stout, posterior tarsi much shorter than the tibiæ (4.8 mm. to 6.2 mm.).

Length 23 mm., width 13 mm.

Described from a single male taken at Wasco, Oregon (1908), which has been in my collection many years. (Type in collection of the author).

In size, shape and sculpture this species resembles *staff* but has a more prominent prothoracic ridge and is more retuse in front. In color and configuration of the prothorax it is close to *ulkei*. From both these species *oregonensis* is at once distinguished by its four-leaf antennal club.

Pleocoma tularensis Leach, n. sp.

Form robust, oval, black, shining above, fimbriate at sides of prothorax and elytra, clothed underneath with long dark brown hair.

Head piceous, moderately punctured; clypeus deeply emarginate, angles slightly divergent; cephalic horn, long, flattened and emarginate at tip. Third segment of antennæ almost three times as long as second and three-fourths as long as the first; sixth segment with a lobe shorter than its length; seventh with a lobe slightly longer than its length; eighth, ninth, tenth and eleventh segments with long lamellæ of increasing length, the last being slightly the longest and equal in length to the first nine segments. (3.6 mm. in type.)

Prothorax twice as wide as long (13 x 6.3 in type), angled at the sides and convergent in front, widest at base; basal angles prominent; very slightly depressed before and behind the disk; surface finely punctured as in *fimbriata*.

Scutellum finely and sparingly punctured, less so at apex.

Elytra at humeri as wide as base of prothorax, widest slightly behind the middle, the sutural striæ becoming more deeply impressed toward the apex where the interval is slightly thickened. The four pairs of geminate striæ very feebly developed.

Legs moderately short, the hind tarsi longer than the tibiæ. (7.6 mm. to 7 mm.)

Length of type 26.5 mm., width 14.6 mm.

Described from a long series of males taken by Mr. E. Gorton Linsley in Sequoia National Park, Tulare County, California, November, 1932. I also have specimens collected by Mr. F. T. Scott at the same place, and have examined others in the Academy collection, taken at Badger in Tulare County. Largest specimen 28.5 mm. long by 17 mm. wide. Smallest specimen 23.5 mm. long by 13.6 mm. wide.

Type No. 3780, Mus. Calif. Acad. Sci. from Sequoia National Park.

Pleocoma tularensis is near *australis* Fall but is readily recognized by its broader form and differently shaped prothorax, which in the former is much wider at the base and more acute in front and much more finely punctured. From *fimbriata* it is separated by the longer third segment of the antennæ, the larger antennal club, the more prominent basal angles of the prothorax, its darker color and smoother and more polished elytra.

For material and suggestions during this study I am deeply indebted to Dr. E. C. Van Dyke, Dr. F. E. Blaisdell, Sr., and Mr. E. Gorton Linsley.

Collecting Notes

On March 15 of this year, I collected at Ben Lomond, Santa Cruz County, California, under debris in a chicken yard, a specimen of the extremely rare *Aphodius cadaverinus* (Mann.). To the best of my knowledge this is the only specimen known in American collections besides that of Dr. Van Dyke in the collection of the California Academy of Sciences, collected near Clear Lake, Lake County, California.*

I also took at Ben Lomond three specimens of *Aphodius opacus* Lec. They were collected March 20, at about noon, and were flying along a narrow dirt road within the margin of the Redwood forest. These are the first I have encountered in this region in three years collecting. I do not know of any records of this species being collected so near the coast in Central California.

I have a specimen of *A. distinctus* (Mull.) from Dunsmuir, California, collected by Mr. H. E. Hinton, and determined by Mr. W. J. Brown. I do not know that this species has ever been recorded from California before; it is probable that this European species is constantly spreading westward and will in time become common on the Pacific Coast.

At Ben Lomond I have also collected *A. sparsus* Lec., *A. neatomæ* Fall, *A. tuberosus* Barrett and *A. davisi* Fall, all in the nests of the Wood-rat, *Neotoma*. I usually take these species in late January or February. My specimens of *tuberosus* are usually almost entirely piceous, but Mr. Barrett has very kindly compared them with his types and they agree perfectly except for color. Of the above, *sparsus* is the only one taken commonly; *neatomæ* is much rarer, and *davisi* and *tuberosus* are quite rare. —Lawrence W. Saylor.

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*Notes on Scarabaeidæ, by E. C. Van Dyke. Pan-Pacific Entomologist, Volume IV, Page 154, 1928.

A

Aceratophallus unicolor Carl, 22
lamellifer Brl., 22

Aglais californica, 67

Agrotisia evelinæ Benj., 4

Ala picteti Staud., 53

Amplinus convexus Carl, 18

Anarta richardsoni Curt., 57
r. etacta Sm., 59
r. feildeni M'L., 57
r. languinosa Sm., 58
r. magna B. & B., 59
r. preblei Benj., 59
r. septentrionis Wlk., 57
r. squara Sm., 59
r. tamsi Benj., 58

Andrena angustifrons Ckll., 155
campbelli Ckll., 153
flavoclypeata Sm., 62
nudimediocornis Vier., 28
opaciventris Ckll., 158
physariæ Ckll., 154
p. trifasciata T. & C., 28
c. transformens Ckll., 157
unicula Ckll., 155
veris Ckll., 156

Aneflomorpha longipennis Csy., 92

Anisostena arizonica Schf., 103
bicolor Sm., 104
kansana Schf., 104
texana Schf., 103

Anomagyna aklavicensis Benj., 56
apropitia Benj., 56
m. arufoides Benj., 55
p.clarkei Benj., 147
imperita Hubn., 148
homogena McD., 149
mallochi Benj., 55
mustelina Sm., 57
perquiritata Morr., 145
speciosa Hbn., 56
m. stejnigeri Benj., 55

Anoplitis anchoroides Schf., 105
rosea Weber, 104

Anthocharis s. flavicoloris Gndr., 151
s. gunderi Ing., 75
s. stella Edwds., 150

Anthophora texana Cress., 159

Apatela acla Benj., 60

Aphelidesmus calverti Chamb., 18
intermedius Chamb., 18

Aphodius cadaverinus Mann., 188
distinctus Mull., 188
linsleyi V.D., 115
opacus Lec., 188
tuberosus Brrt., 188

Aradus insoletus V.D., 171

Archanarta bryanti Benj., 54
constricta Wlk., 54
quieta Hbn., 53

Argynnis behrensi, 73

Ascia *See* Pieris

Aulicus terrestris Linsl., 95

Autographa
interrogationis L., 61
i. herschelensis Benj., 61

B

Ball, E.D., paper by, 133

Benjamin, F.H., papers by, 1, 53, 100, 145

Blaisdell, F.E., paper by, 88

Blatchley, In Days Agone, Rev., 48

Brachycoryna
lateralis Schf., 105
f. texanus Schf., 106

Brenthis f. gunderi Hpr., 99

Buprestis contortæ Hpng., 84
intricata Csy., 85
langi Mann., 86
maculiventris Say, 86
nuttalli Kby., 87
rusticorum Kby., 85

C

Calocorisca californica Knght., 69

Campsicnemus nigripes V.D., 67

Carabus granulatus L., 117
nemoralis Mull., 117

Cassida flaveola Th., 107
nebulosa L., 107

Catonia arbutina Ball, 135
brunella Ball, 137
constellata Ball, 137
fumida Ball, 135
indella Ball, 136

Caudell, A.N., paper by, 125
Centipeds, 11
Ceratomegilla ulkei Cr., 126
Chamberlin, R.V., papers by, 11, 122
Chelymorpha p. luteata Schf., 108
Chloridolum loochooanum Grsst., 163
Chondrodesmus euliotus Chamb., 21
falciphallus Chamb., 20
Coccinellidæ of Alaska, 126
Cockerell, T.D.A., papers by, 25, 28, 153
Collembola of Washington, 77
Cosmotoma sertifer Serv., 132
Cottle, J.E., paper by, 73
Cyathocerus bufo Hntn., 162
horni Sharp., 161
Cyrtoclytus formosanus Grsst., 167

D

Dacerla inflata Uhl., 172
Darlington, P.J., paper by, 110
Dendroctonus valens Lec., 47
Dermaptera in C.A.S. Coll., 140
Diaporus omalopyge Brl., 24
Dodge, E.A., necrology, 52
Dyslobus Lec., Monog., 31
bakeri V.D., 43
blaisdelli V.D., 42
decoratus Lec., 41
denticulatus Pierce, 38
dolorosus V.D., 46
franciscanus V.D., 45
granicollis Lec., 38
granulatus Csy., 45
lecontei Csy., 37
raucus Horn, 42
segnis Lec., 36
simplex V.D., 37
sordidus Horn, 45
tanneri V.D., 42
verrucifer Csy., 38
g. vestitus V.D., 39
viridescens V.D., 40
wilcoxi V.D., 40

E

Emariannia Benj., 2
cucillidea Benj., 3
Engytatus geniculatus Reut., 67
Epiptera shoshone Ball, 133
Ethophallus Chamb., 19
cervantes Chamb., 20
Endistenia costipennis Fall, 92
Euptychodera corrugata V.D., 171
Euschides cressoni Blsd., 152
Evermann, B.W., necrology, 10

F

Forficula auricularia L., 129

G

Gallitobius Chamb., 12
ethophor Chamb., 12
ricanus Chamb., 14
Gargaphia gentilis V.D., 171
Gastrodes conicola Usng., 127
Gehringia Drlngt., 110
olympica Drlngt., 111
Gehringiini Drlngt., 110
Geometridæ, of S. Africa, 126
Georyssus minor Sharp, 160
Gressitt, J.L., paper by, 163
Gunder, J.D., paper by, 150

H

Halme eburneocinctus Grsst., 168
Harper, A.V., paper by, 97
Hatch, M.H., papers by, 7, 117
Hebard, M., paper by, 140
Helops crockeri Blsd., 89
Heesperapis wilmattæ Ckll., 26
Hicks, C.H., paper by, 49
Hilton, W.A., paper by, 91
Hinton, H.E., paper by, 160
Holland, W.J., necrology, 8
Homœsoma electellum Hulst, 62

Hood, J.D., paper by, 173
Hopping, R., paper by, 84
Hudson Bay butterflies, 97
Hypocera californica V.D., 63

I

Ingham, C.H., paper by, 75

K

Keifer, H.H., notes by, 62, 67
Knight, H.H., papers by, 69, 71

L

Lampethusa nicholi Kngt., 71
Largidea marginata V.D., 182
Leptidea brevipennis Muls., 170
Linsley, E.G., notes by, 92, 132, 138, 170
Linsley, E.G., papers by, 93, 95, 131
Lopidea eremita V.D., 172
usingeri V.D., 96

M

Margus repletus V.D., 99
Megachile xerophila Ckll., 27
Melanophila consputa Lec., 138
Microrhopala rubrolineata Mann., 106
r. vulnerata Horn, 106
Millipeds, 14
Mills, H.B., paper by, 77
Miscodera arctica Payk., 7
erythropus Mots, 7
insignis Mann., 7
Monillipatrobus Htch., 118
punctatus Htch., 118
Moulton, D., paper by, 139

N

Neoclytus nubilus Linsl., 93
Neohermes infuscatus Cdl., 125
Nomenclatorial, 109
Nomia californica Ckll., 159
Notiphilides maximiliani H.& S., 11
Nyssodesmus
albomarginis Chamb., 16
bivirgatus Carl, 14
valerii Chamb., 16

O

Œneis iduna, 102
Oligia
minuscula Morr., 149
m. grahami Benj., 150
Oligothrips oreios Mltn., 139
Ommatostolidea Benj., 1
julitæ Benj., 2
Opadothripidæ Bagn., 139
Orsonjohnsonus Htch., 119
Orthoporus obsconsus Chamb., 23
Orthotylus contrastus V.D., 172
Osmia angustipes Ckll., 158
liogastra Ckll., 26
Otocryptops ferrugineus L., 11
melanostomus Newp., 11
Otostigmus scabricaudus H. & S., 12
Oxidus gracilis Koch., 19

P

Paniscus semirufus, 49
Papaipema circumlucens Sm., 100
depictata Benj., 101
o. humili Bird, 100
ochroptena Dyar, 100
c. vaha Benj., 101
Paraneura simulella Dietz., 62
Parasyntormon utahnum V.D., 64
Pentispa s. vittula Wse., 107
Pepsis chrysothemis Luc., 159
cinnabarina Luc., 159
hirsuta Salm., 9
Phœnicophanta modestula Dyar, 5
Phrynidius armatus Lnsl., 131
Phytocoris nigrifrons V.D., 172

Pieris b. gunderi Ing., 75
Platycerus agassizi Lec., 182
Platylygus vanduzeei Usng., 172
Platynus belleri Htch, 120
pusillus Lec., 121
Plecoma oregonensis Leach, 186
shastensis V.D., 183
tularensis Leach, 186
Podalonia violaceipennis Lep., 49
Polyphylla hirsuta V.D., 116
Prentis, R.W., paper by, 129
Psalidonota texana Schf., 108
Pterostichus johnsoni Ulke, 119
vulgaris L., 119

R

Raparna melanospila Gn., 6
Reduvius senilis V.D., 171
Reuteroscopus falcatus V.D., 172
Rhinocricus chitarianus Chamb., 23
pygmoides Chamb., 22
Rolfs, A.R., paper by, 77

S

Salman, K.A., paper by, 9
Saylor, L.W., notes by, 182, 188
Schaeffer, C., paper by, 103
Schizomus antilus Hltn., 91
Sciapus unifasciatus Say, 65
Scolopendra viridis Say, 12
Scott, F.T., paper by, 126
Seminellogon Chamb., 18
chitarianus Chamb., 19
Siphonophora valerii Chamb., 24
Speocropia fernæ Benj., 3
Spinoliella meliloti Ckll., 159
puella Ckll., 25
Steritsky, R.F., note by, 102
Storer, Tracy I., note by, 67
Suturodes tardus Chamb., 11

T

Tathorhynchus Hamps., 6, note
angustiorata Grt., 6
Thinophilus prasinus Jhns., 65
Thrips pallidicollis Hood, 173
sambucifloris Hood, 177
sieversiæ Hood, 175
Timberlake, P.H., paper by, 28
Trachypachus Mots., 117
Trechus obtusus Er., 119
Tuganobia Chamb., 122
potteria Chamb., 124

U

Uniptera Ball, 133
ampliata Ball, 134
Usinger, R.L., notes by, 99, 182
Usinger, R.L., papers by, 30, 127, 171

V

Van Duzee, E.P., notes by, 8, 10, 24, 48, 52, 72, 90, 109, 114, 128
Van Duzee, E.P., paper by, 96
Van Duzee, M.C., coll. of Diptera, 72
Van Duzee, M.C., paper by, 63
Vanduzeeiana sleveni Usn., 30
Van Dyke, E.C., papers by, 31, 115

W

Walther, Eric, paper by, 47

X

Xenoglossodes eriocarpi Ckll., 159
Xylotrechus angulithorax Grsst., 165
b. aureobrunneus Grsst., 166
yanoi Grsst., 164
Xysticus formosus Banks, 124

Vol. IX January, 1933 No. 1

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USDA 176

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CONTENTS

PAGE

BENJAMIN, NEW GENERA AND SPECIES OF PHALÆNIDÆ 1
HATCH, THE SPECIES OF MISCODERA 7
SALMAN, A NEW SPECIES OF PEPSIS 9
CHAMBERLIN, CENTIPEDS AND MILLIPEDS FROM ARIZONA . . . 11
COCKERELL, BEES COLLECTED AT BOREGO, CALIFORNIA 25
TIMBERLAKE AND COCKERELL, A NOTE ON ANDRENA NUDIMEDIOCORNIS 28
USINGER, THE MALE OF VANDUZEEINA SLEVENI 30
VAN DYKE, A SHORT REVIEW OF DYSLOBUS 31
WALTHER, A PRACTICAL METHOD OF CONTROLLING DENDROCTONUS VALENS 47
VAN DUZEE, A NATURE BOOK FOR ENTOMOLOGISTS 48

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CONTENTS

	PAGE
HICKS, ON THE RELATIONSHIP OF AN ICHNEUMONID TO CERTAIN DIGGER-WASPS	49
BENJAMIN, NOTES ON PHALAENIDÆ FROM ARCTIC AMERICA	53
VAN DUZEE, M. C., ON FIVE SPECIES OF DIPTERA, NEW AND OLD	63
STORER, AGLAIS CALIFORNICA IN CALIFORNIA IN 1932	67
KNIGHT, CALOCORISCA CALIFORNICA, N. SP., AN ADDITIONAL GENUS FOR THE UNITED STATES	69
KNIGHT, LAMPETHUSA NICHOLI, A NEW SPECIES FROM ARIZONA	71
COTTLE, ANOTHER RARE BUTTERFLY	73
INGHAM, TWO NEW CALIFORNIA BUTTERFLIES	75
MILLS AND ROLFS, COLLEMBOLA FROM THE STATE OF WASHINGTON	77
HOPPING, A NEW BUPRESTID FROM BRITISH COLUMBIA, WITH NOTES ON THE GENUS BUPRESTIS	84
BLAISDELL, A NEW SPECIES OF HELOPS FROM GUADALUPE ISLAND	88
HILTON, A NEW WHIP-SCORPION FROM CUBA	91
LINSLEY, A NEW SPECIES OF NEOCLYTUS FROM WHITE FIR	93
LINSLEY, A NEW CALIFORNIA CLERID BEETLE	95
VAN DUZEE, E. P., A NEW LOPIDEA FROM CALIFORNIA	96

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1933

THE PAN-PACIFIC ENTOMOLOGIST

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CONTENTS

	PAGE
HARPER, HUDSON BAY BUTTERFLIES	97
BENJAMIN, NOTES ON PAPAIPEMA	100
SCHAEFFER, NOTES OF HISPINI AND CASSIDINI	103
DARLINGTON, A NEW TRIBE OF THE CARABIDÆ	110
VAN DYKE, TWO NEW SPECIES OF SCARABAEIDÆ	115
HATCH, NOTES ON CARABIDÆ	117
CHAMBERLIN, ON A NEW EYELESS SPIDER OF THE FAMILY LINYPHIIDÆ	122
CAUDELL, NEOHERMES INFUSCATUS, A NEW SIALID FROM CALIFORNIA	125
SCOTT, ADDITIONS TO THE COCCINELLIDÆ OF ALASKA	126
USINGER, A NEW SPECIES OF GASTRODES	127
PRENTISS, REGENERATION OF THE CERCI IN FORFICULA	129
LINSLEY, A NEW LONGICORN BEETLE FROM CENTRAL AMERICA	131
BALL, NEW WESTERN LEAFHOPPERS OF THE FAMILY ACHILIDÆ	133
MOULTON, OLIGOTHRIPS OREIOS, A NEW GENUS AND SPECIES OF THRIPS	139
HEBARD, DERMAPTERA IN THE COLLECTION OF THE CALIFORNIA ACADEMY OF SCIENCES	140

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CONTENTS

	PAGE
BENJAMIN, NOTES ON PHALÆNIDÆ	145
GUNDER, ANTHOCHARIS SARA STELLA	150
COCKERELL, NEW OR LITTLE KNOWN WESTERN BEES	153
HINTON, TWO COLEOPTEROUS FAMILIES NEW TO MEXICO	160
GRESSITT, NEW LONGICORNS FROM THE JAPAN EMPIRE	163
USINGER, NEW DISTRIBUTIONAL AND HOST PLANT RECORDS OF HETEROPTERA FOR CALIFORNIA	171
HOOD, THREE NEW SPECIES OF THRIPS FROM THE WESTERN UNITED STATES	173
VAN DYKE, A NEW SPECIES OF PLEOCOMA	183
LEACH, TWO OLD AND TWO NEW PLEOCOMAS	184
INDEX TO VOLUME IX	189

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